

EPC COMMISSION MINUTES & AGENDA

MONTH April

YEAR 1987

MINUTES
ENVIRONMENTAL PROTECTION COMMISSION
Wallace State Office Building
Des Moines, Iowa
April 20-21, 1987

The meeting of the Environmental Protection Commission was held in the Wallace State Office Building in Des Moines, Iowa on April 20 and 21, 1987 convening at 1:30 p.m. on April 20.

MEMBERS PRESENT

Richard Timmerman, Linda Appelgate, Clark Yeager, Donna Hammitt, Keith Uhl, Wayne Gieselman, Charlotte Mohr, Nancylee Siebenmann, Robert Schlutz.

MEMBERS ABSENT

Catherine Dunn, Gary Priebe (April 20 and 21); Clark Yeager (April 20)

ADOPTION OF AGENDA

The following was added to the agenda:

Appointments -- City of Willey -- 1:00 p.m.

Motion was made by Charlotte Mohr to leave the James and Julia King referral tabled until the May meeting. Seconded by Nancylee Siebenmann. Motion carried unanimously.

Motion was made by Charlotte Mohr to approve the agenda as amended. Seconded by Richard Timmerman. Motion carried unanimously.

ADOPTION OF MINUTES

Nancylee Siebenmann pointed out a typographical error on Page 30, fourth paragraph from the bottom, "by" should read "why."

Motion was made by Nancylee Siebenmann to approve the minutes of March 16, 1987 as amended. Seconded by Charlotte Mohr. Motion carried unanimously.

MONTHLY REPORTS

Allan Stokes, Division Administrator, Environmental Protection Division, presented the following item.

The following monthly reports are enclosed for the Commission's information.

1. Rulemaking Status Report
2. Variance Report
3. Hazardous Substance/Emergency Response Report

4. Enforcement Status Report

5. Contested Case Status Report

Members of the department will be present to expand upon these reports and answer questions.

Iowa Department of Natural Resources
Environmental Protection Commission
RULEMAKING STATUS REPORT
April 1, 1987

PROPOSAL	DRAFT TO COMMISSION	NOTICE PUBLISHED	RULES REVIEW COMMITTEE	HEARING	SUMMARY OF COMMENTS & RECOMMENDATIONS TO COMMISSION	RULES ADOPTED	RULES PUBLISHED	RULE EFFECTIVE
1. Ch. 6 - Declaratory Rulings	1/20/87	2/11/87		--	4/21/87	*4/21/87	*5/20/87	*6/24/87
2. Ch. 22, 23 PSD	11/12/86	12/03/86	1/06/87 4/13/87	12/23/86 12/30/86 1/06/87	2/17/87	2/17/87	3/11/87	4/15/87
3. Ch. 41 - Fluoride MCL	4/20/87	*6/17/87						
4. Ch. 43 - Water Supply Grants	4/20/87	*6/17/87						
5. Ch. 50 - 52 Water Allocation (Conservation)	4/20/87	*6/17/87						
6. Ch. 64 - Design Standards (12, 14, 16, 18C)	2/17/87	3/11/87	4/13/87	4/01/87 4/03/87 4/06/87				
7. Ch. 65 - Feedlots	11/12/86	12/03/86	1/06/86	12/23/86 12/30/86 1/03/87	*5/21/87	*5/21/87	*6/17/87	*7/22/87
8. Ch. 100, 103 - Landfill Groundwater Monitoring	3/16/87	*5/20/87		6/09/87 6/10/87 6/11/87				
9. Ch. 135 - Underground Tank Monitoring	12/15/86	1/14/87	2/10/87	2/03/87 2/05/87 2/10/87				

*Projected

MONTHLY VARIANCE REPORT

03/31/87

No. Facility	Program	Engineer	Subject	Decision	Date
1 University Hygenic Lab	Air Quality		Smoke Generators	approved	03/10/87
2 Blumenstein Sawmill	Air Quality		Rubbish	denied	03/20/87
3 Atalissa, City of	Wastewater Const.	Hawkeye Engr. Co	Clarifier Depth	approved	03/05/87
4 Atalissa, City of	Wastewater Const.	Hawkeye Engr. Co	Clarifier Settling Rate	approved	03/05/87
5 Des Moines ICA	Wastewater Const.	Donahue/Metcalf	Clarifier Flow Splits	approved	03/06/87
6 Des Moines ICA	Wastewater Const.	Donahue/Metcalf	Activated Sludge Design Basis	approved	03/06/87
7 Ames, City of	Wastewater Const.	Harris Seidel	Sludge Lagoon-Aeration	approved	03/09/87
8 West Union, City of	Wastewater Const.	TeKippe Engr.	Digester Access Openings	approved	03/10/87
9 Kingsley, City of	Wastewater Const.	Kuehl & Payer	Curtain Wall	approved	03/12/87
10 Odebolt, City of	Wastewater Const.	Kuehl & Payer	Curtain Wall	approved	03/12/87
11 Blue Grass, City of	Wastewater Const.	Shive-Hattery	Curtain Wall	approved	03/13/87
12 Baxter, City of	Wastewater Const.	Veenstra & Kien	Curtain Wall	approved	03/23/87
13 Huneston, City of	Wastewater Const.	Hall Engr. Co.	Lagoon Riprap	denied	03/23/87
14 Huneston, City of	Wastewater Const.	Hall Engr. Co.	Lagoon Shape	approved	03/23/87
15 Risen Son Christ.Vill.	Wastewater Const.	Jensen,Cary,Shoff	Clarifier Depth	approved	03/23/87
16 Risen Son Christ.Vill.	Wastewater Const.	Jensen,Cary,Shoff	Clarifier Settling Rate	approved	03/23/87
17 Roger Poeckes	Flood Plain		Fercent Length Red.	approved	03/13/87
18 Positech Corp.	Wastewater Oper.		Monitoring Freq.	approved	03/02/87
19 Union Electric	Wastewater Oper.		Monitoring Freq.	approved	03/02/87
20 Sanborn, City of	Wastewater Oper.		Sample Type	approved	03/25/87

REPORTS OF HAZARDOUS CONDITIONS

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During the period of March 1, 1987 through March 31, 1987, reports of 55 hazardous conditions were forwarded to the Central Office. Two incidents are highlighted, followed by a general summary and the number per field office.

Date Reported and County	Description: Material, Amount, Date of Incident, Cause, Location, Impact	Responsible Party	Response and Corrective Actions
3-06-87 LINN	A manhole lid on a tank was not properly secured following the transfer of 28% nitrogen fertilizer, and 60 to 70 tons of the material leaked out at 1705 Dow St. in Ely, Iowa, on March 6, 1987. Some material flowed to a swampy area.	Krob Elevator 1705 Dow Street Ely, Iowa	Most of the material was contained in a dike. Shovels and pails were used in an attempt to recover material from the swampy area, since it could not be reached with heavy equipment. Material contained in the diked area was pumped into a tank. Pits were dug to collect additional product, and contaminated soil was removed for application on land.
3-16-87 DELAWARE	On March 16, 1987, 7-21-7 N-P-K Fertilizer was discovered surfacing at the south edge of Hopkinton, Iowa, two days after a storage tank had been filled. About ten tons of material leaked from an apparent hole in the bottom of the tank.	Cropmate P. O. Box 182 Reinbeck, Iowa	Liquid was picked up from a drainage ditch and driveway. The material was stored until it could be spread on land. Limestone was spread on the driveway and a dike will be constructed to prevent future run-off.

Numbers in Parentheses Represent Reports For The Same Period in Fiscal Year 1986

Month	Total # of Incidents Reported	Substance Type			Mode					
		Petroleum Product	Agri. Chemical	Pestic Chemicals and Substances	Handling and Storage	Pipeline	Highway Incident	RR Incident	Fire	Other
Oct	79	45	0	34	33	0	18	2	0	6
Nov	24	12	3	9	17	0	5	1	0	1
Dec	43	36	1	6	24	1	14	1	0	3
Jan	40	32	3	13	37	0	9	0	1	1
Feb	41	25	1	15	30	1	5	1	2	2
Mar	55 (43)	35 (21) UST-1a	5 (6)	15 (16) UST-1	37 (30) UST-19	0 (0)	12 (9)	4 (1)	1 (0)	1 (3)

Total # of Incidents Per
 Field Office 01 02 03 04 05 06
 This Period 16 04 04 02 12 17

Enforcement Report Update

The following new enforcement actions were taken last month:

Name, Location and Field Office Number	Program	Alleged Violation	Action	Date
Derner's of Milford Milford (3)	Wastewater	Construction w/o permit prohibited discharge	Order /Penalty	3/3/87
Van Buren Co. SW Mgmt. Comm. Keosauqua (6)	Solid Waste	Daily operation	Order /Penalty	3/3/87
Monti View Mobile Home Park Monticello (1)	Drinking Water	Failure to monitor for bacteria	Order /Penalty	3/3/87
First Place Lanes Audubon (4)	Drinking Water	Failure to monitor for bacteria & nitrates	Order /Penalty	3/3/87
Rinehart Const. Co. Des Moines (5)	Solid Waste	Proper disposal of solid waste	Order /Penalty	3/11/87
Kossuth Co. Bd. of Supv. Algona (2)	Solid Waste	Daily Operation	Order /Penalty	3/11/87
John A. McFedries Davenport (6)	Solid Waste	Open dumping/clean-up work	Order /Penalty	3/11/87
Roger Munn & Dorothy J. Traum, Davenport (6)	Solid Waste	Open dumping/clean-up work	Order /Penalty	3/11/87
Chico's Supper Club Burr Oak (2)	Drinking Water	Monitoring, no permit	AG Referral	3/16/87
William Poggemiller Louisa Co. (6)	Flood Plain	Channel Change	AG Referral	3/16/87
James Waterhouse Washington Co. (6)	Flood Plain	Channel Change	AG Referral	3/16/87
City of Hamburg Hamburg (4)	Wastewater	Monitoring of wastewater	Order /Penalty	3/18/87
City of Swan Swan (5)	Water Supply	Bacterial; chlorination; monitoring	Order /Penalty	3/18/87
Tim's Town Pump Osage (2)	Water Supply	Failure to sample for bacteria/nitrate; upgrade well	Order /Penalty	3/20/87
Reiscreen Company Pella (5)	Air Quality	Air emission	Order /Penalty	3/20/87
Lehigh Portland Cement Mason City (2)	Wastewater	Discharge w/o permit	Order /Penalty	3/20/87
City of Ames Ames (5)	Wastewater	Compliance schedule	Order	3/20/87
Alvin Berge & Ron Rognes & Rognes Bros. Excavating Inc. Northwood (2)	Air Quality	Open & unauthorized burning	Order /Penalty	3/23/87
Gladyth I. McConnell Eddyville (6)	Wastewater/ Solid Waste	Prohibited discharge/ animal waste clean-up	Order /Penalty	3/23/87
Giese Construction Co. Eagle Grove (2)	Solid Waste	Failure disposal of non-hazardous waste	Order /Penalty	3/23/87
Ag Processing, Inc. Eagle Grove (2)	Solid Waste	Failure to dispose of non-hazardous waste	Order /Penalty	3/23/87
City of Long Grove (6)	Wastewater	Compliance schedule	Order	3/27/87

Department of Natural Resources
Environmental Protection Commission
Attorney General Referrals
April 1, 1987

Name, Location and Region Number	New or Updated	Program	Alleged Violation	DNR Action	Status	Date
Aldex Corporation Council Bluffs (4)	Update	Hazardous Waste	Release of Hazardous Substances	Referred to Attorney General	Referred EPA suit filed State Intervention	12/16/82 2/26/87 3/05/87
Boyer Valley Company Denison (4)	Update	Wastewater	Prohibited Discharge	Referred to Attorney General	Referred Consent Decree	10/27/86 12/15/86
Bozarth and Bell, Inc. Davenport (6)	New	Solid Waste	Open Dumping	Order	Referred	2/20/87
Bryant, Robert E. Cherokee (3)		Wastewater	Prohibited Discharge	Order	Referred Suit Filed Bankruptcy Proceedings	6/01/86 9/08/86
Cedar Hills Apts. Dubuque (1)	New	Water Supply	Monitoring; Operating without permit	Order/Penalty	Referred	2/20/87
County Corner Cafe Pacific Junction (4)	New	Wastewater	Prohibited Discharge	Order/Penalty	Referred	2/20/87
Ellers, Duayne Meteorico (1)	Updated	Flood Plain	Unauthorized Fill	Referred to Attorney General	Referred Suit Filed Default Judgment	6/19/84 11/01/85 1/12/87
Finlen Landfill Chickasaw County (1)		Solid Waste	Operation Violations	Order	Referred	10/27/86
Hardin County Solid Waste Comm. Eldora (2)	Updated	Solid Waste	Operation Violations	Order	Referred Suit Filed Consent Decree	12/27/84 3/18/85 3/23/87
Hill Top Feed Yards, Inc. Pottawattamie County (4)		Wastewater	Feedlot Lagoon Discharge	Order	Referred Suit Filed	9/16/85 1/23/86
Jungling Farms, Inc. Buier County (2)		Wastewater	Prohibited Discharge	Order	Referred Suit Filed	7/31/84 1/31/87
Kit-Kat Club Evansdale (1)	Updated	Drinking Water	Failure To Pay Penalty	Penalty Order	Referred Penalty Paid	10/27/86 1/87
Keokuk/Ogilvie Mills (6)		Wastewater	Discharge Violations	Order/Referral	Referred	7/31/86
K & K Truckstop Lenox (4)	New	Drinking Water	Penalty/Nonpayment	Order	Referred	2/20/87
Klema, City of; Korbert, Inc. (2)	New	Wastewater	Discharge Violations	Order	Referred	11/30/86
New Shack Tavern Cedar Rapids (1)	Updated	Water Supply	Penalty/Monitoring	Order	Referred Consent Decree	7/31/86 3/19/87
Parker, A.J. Diagonal (4)		Solid Waste	Operation Violations at Permitted Site	Order	Referred Injunction issued Compliance Date	3/21/79 2/28/80 9/21/81

Department of Natural Resources
Environmental Protection Commission
Attorney General Referrals
April 1, 1987

Payne, Lawrence Offimus (6)	New	Solid Waste	Open Dumping	Order/Penalty	Referred	2/20/87
Paster Derby Oil Company Deavenport (6)		Wastewater	Prohibited Discharge	Referred to Attorney General	Petition Filed Judgment Awarded Cleanup Plan Approved	3/83 10/12/84 10/24/84 1/27/86
Sallsbury, Ronald, Presto-X Dos Hules (5)		Hazardous Waste	Treatment and Storage Violations	Referred to Attorney General	Referred Judgment Appealed to Sup. Ct. Briefs Filed	9/18/84 5/86 7/86 10/86
Name, Location and Region Number	New or Updated	Program	Alleged Violation	DNR Action	Status	Date
Shelter Shield Buffalo Center (6)	New	Air Quality	Excess emissions; Construction w/o permit	Order/Penalty	Referred	2/20/87
Terrace Hill Sanitary Dist. Hampton (2)	New	Wastewater	Failure to Monitor	Order	Referred	11/30/86
Wisconsin Barge Service Clinton (6)		Wastewater	Prohibited Discharge	Referred to Attorney General	Referred Suit filed	11/20/85 7/86
Wittstock, Arlo Union County (4)		Flood Plain	None - Judicial Review	Permit issued	Petition for Judicial Review Remanded to Agency	6/24/86 10/27/86
Wolleson, Robert G. Buena Vista and Cherokee Counties (3)		Wastewater	Prohibited Discharge	Order	Referred Hearing Consent Decree Contempt Finding Contempt Finding	11/27/84 4/22/85 4/25/85 7/02/85 9/25/86
Woodland Park Jones County (1)	Update	Wastewater	Prohibited Discharge	Order	Referred Suit Filed Temporary Injunction	7/31/86 11/16/86 2/13/87
Woodside Mobile Home Estates Mount Pleasant (6)		Drinking Water	Failure to Monitor	Order	Referred Suit Filed	5/31/85 1/24/86
Yocum, Max Johnson (6)		Flood Plain	Prohibited Construction	Defending	Suit Filed Motion to Dismiss Denied	12/18/84 3/06/85 8/07/85
				Referred to Attorney General	Referred Counter Claim Filed Trial Set	7/12/85 10/85 4/28/87

Summary of Administrative Penalties

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The following administrative penalties are due:

NAME/LOCATION	AMOUNT	DUE DATE
*Shelter Shield (Buffalo Center)	\$1,000	12-03-86
*Lawrence Payne (Ottumwa)	700	12-05-86
*Country Corner Cafe (Pacific Junction)	400	12-21-86
*Cedar Hills Apartments (Dubuque)	1,000	12-29-86
*K & K Truckshop (Lenox)	212	12-29-86
Indian Creek Country Club (Nevada)	162	1-02-87
*Chico's Supper Club (Burr Oak)	863	2-10-87
1st Pleasant View Subdivision (Clarion)	224	3-06-87
Redwood Resort (Ruthven)	289	3-07-87
OK Lounge (Marion)	448	3-29-87
City of Dysart	400	3-13-87
Shady Oaks Golf Course (Ackworth)	212	4-04-87
Grandview Corners (Grandview)	112	4-07-87
Blake Grove Retreat (Ackley)	124	4-07-87
IBP, inc. (Columbus Junction)	1,000	4-15-87
Cargill, Inc. (Eddyville)	1,000	4-22-87
Silvercrest Golf & Country Club (Decorah)	215	4-25-87
Walter Groeneweg (Rock Valley)	750	4-27-87
Page County Fig. Inc. (Page County)	500	4-25-87
Derner's of Milford (Milford)	800	5-08-87
First Place Lanes (Audubon)	307	5-08-87
Monti-View MHP (Monticello)	820	5-08-87
Van Buren County SLF	500	5-08-87
John McFedries (Davenport)	100	5-11-87
Kossuth County SLF	600	5-11-87
Rhinehart Construction Co. (N. Dallas SLF)	800	5-15-87
Lehigh Portland Cement	1,000	5-22-87
Tim's Town Pump (Mitchell)	760	5-22-87
Berge/Rognes Bros. Excavating (Northwood)	600	5-23-87
City of Swan	530	----
Gladyth McConnell (Eddyville)	1,000	5-24-87
Giese Construction Co. (Eagle Grove)	1,000	5-25-87
Ag Processing, Inc. (Eagle Grove)	1,000	5-25-87

* Referred to the Attorney General

The following administrative penalties have been appealed:

NAME/LOCATION	AMOUNT
Iowa Power and Light (Council Bluffs)	\$1,000
*Finlan Landfill (Chickasaw County)	1,000
Beach/Ralston (Fort Dodge)	500
Kula and Boge (Hartelle)	1,000
McConnell; Yoder Feed (Ottumwa)	1,000
Handi-Klasp, Inc. (Webster City)	1,000
NW States Cement (Mason City)	1,000
City of Kellogg	1,000
Munn and Traus (Davenport)	100
Ken Turner (Fort Madison)	1,000
Lakewood Sanitary District	1,000

The following administrative penalties were paid in March:

NAME/LOCATION	AMOUNT
Obie's Hurstville Tap (Maquoketa)	\$ 100
Clinton Drive-In Theater	162
Nahaska County SLF	200
City of Hamburg	200
Rolscreen Company (Pella)	1,000
*New Shack Tavern (Linn County)	230

The Woodland Park insufficient funds check was made good.

The Otter Creek Station (Swingle) penalty was written off since the former owner went through bankruptcy and the new owner is not responsible for past violations.

* Referred to the Attorney General

Department of Natural Resources
Environmental Protection Commission
Contested Cases
April 1, 1987

DATE RECEIVED	NAME OF CASE	ACTION APPEALED	PROGRAM	ASSIGNED TO	STATUS
10-28-83 1-28-85	Frit Industries	Administrative Order Hazardous Waste Registry	HW	Landa	Settlement close.
9-14-84	Belmond, et. al.	Administrative Order	HC	Landa	Proposed decision 11-4-85; appealed.
10-17-85	City of Bevington	Administrative Order	WW	Hansen	Hearing continued.
1-23-86	Oswein Soil Service	Administrative Order	WW	Landa	Hearing set for 4-30-87.
5-07-85	Iowa Power and Light	Administrative Order	Air	Landa	Consent order 3-87.
5-21-86	Besch and Raiston	Administrative Order	SW	Landa	Settlement close; Removal begun.
6-12-86	ADM - Clinton	Administrative Order	Air	Landa	Hearing continued.
7-30-86	IBP - Columbus Junction	NPDES Permit	WW	Hansen	Hearing held 1-14-86; briefs to be filed.
9-10-86	Farmer's Mutual Coop	Administrative Order	WW/SW	Landa	Proposed Consent Order 3-23-87
9-10-86	Kula and Boge	Administrative Order	SW	Landa	Negotiating before filing. Removal started.
10/22/86	Yoder Feeds, Inc. et.al	Administrative Order	WW/SW	Kennedy	Proposed decision 3-12-87.
10/27/86	Union County/Wittstock	Permit issuance	FP	Clark	Remanded by District Court.
10/28/86	Lewoni Municipal Utilities	Administrative Order	WW	Hansen	Negotiating before setting hearing.
10/29/86	Hend-Klapp Company, Inc.	Administrative Order	AQ/WW SW	Landa	Hearing set for 4-16-87.
11/05/86	Nebraska Co. SLF	Administrative Order	SW	Kennedy	Settled.
11/14/86	Gale Oared	Permit Condition	FP	Clark	Hearing set for 4-14-87.
11/18/86	Northwestern States	Administrative Order	WW	Landa	Hearing continued.
12-03-86	City of Milwaukee	Administrative Order	WS	Hansen	Hearing continued.
12/11/86	Eloise Reese	Permit Condition	FP	Clark	Hearing set for 5-06-87.
12/24/86	Francis Heberlin	Administrative Order	FP	Clark	Hearing continued.
12/30/86	Agripro Seeds	Permit Denial	AQ	Landa	Hearing continued.
1/29/87	Seaward Development	None - Public Hearing	FP	Clerk	Hearing set for 4-09-87.
2/ /87	Neopro, Inc.	Administrative Order	AQ	Landa	Hearing set for 4-17-87.
2/16/87	City of Kellogg	Administrative Order	WW	Murphy	Negotiating before filing.
3/03/87	Turner, Mildred and Kenneth	Administrative Order	SW	Landa	Hearing set for 4-30-87.
3/10/87	Lakewood Sanitary District	Administrative Order	WW	Hansen	Hearing set for 3-07-87.
3/15/87	City of Kellogg	Administrative Order	WW	Murphy	Negotiating before filing.
3/16/87	Deere and Company	Administrative Order	WW	Murphy	Negotiating before filing.
3/16/87	Mayer/Greiner/Vogel	Administrative Order	FP	Clark	New Case.
3/19/87	City of Mt. Pleasant	Administrative Order	WW	Hansen	New Case.
3/23/87	Traum and Mann	Administrative Order	SW	Kennedy	New Case.

Mr. Stokes distributed additional reports which the Commission previously requested. Discussion followed.

STATUS OF THE ONE-TIME PESTICIDES AND SYNTHETIC ORGANIC CHEMICAL MONITORING ACTIVITY

Allan Stokes, Division Administrator, Environmental Protection Division, presented the following item.

The staff will present a short status report on the implementation and preliminary results of the pesticides and synthetic organic chemical monitoring activity.

Sampling activities began November 1, 1986 and are scheduled to continue through November 1, 1987. Upon completion of the sampling and analytical activities, a report will be completed so that it can be submitted to the General Assembly by April 1, 1988.

Mr. Stokes explained the monitoring activity in detail and distributed a report showing monitoring results.

Charlotte Mohr reported that she had samples tested from four wells at farms near her area. These wells, slightly over 100 feet deep, were sampled for 13 pesticides and the results were all negative. She stated that in some of the sandy, shallower wells pesticides are being found.

GRANTS TO PUBLIC WATER SUPPLIES

Allan Stokes, Division Administrator, Environmental Protection Division, presented the following item.

Proposed rules will be presented to the Environmental Protection Commission for information concerning grants for public water supplies.

Subsection 309.4 of Chapter 455B of the Iowa Administrative Code authorizes the award of grants to water supplies for the abatement or elimination of threats to public health and safety resulting from contamination of water supply source. The source of these grant funds is the landfill tonnage fee.

An amount equal to 25 percent of the annual receipts to the groundwater fund derived from the landfill tonnage fee is reserved for providing grants. A public water supply is limited to receiving not more than 10 percent of the monies reserved for this purpose and must expend the money before the end of the fiscal year.

Mr. Stokes stated that this was provided as an information item and will be presented as a Notice of Intended Action next month.

Richard Timmerman asked why these rules are being proposed.

Mr. Stokes stated that H.F. 2303 mandated that a system of grants be provided to municipalities for public water supplies.

CHANGE IN MAXIMUM CONTAMINATION LEVEL FOR FLUORIDE -- INFORMATIONAL

Allan Stokes, Division Administrator, Environmental Protection Division, presented the following item.

Proposed rules will be presented to the Environmental Protection Commission for information concerning changing the fluoride maximum contaminant level.

Revisions to the federal primary drinking water standards relative to the fluoride maximum contaminant level allow for minor modifications to be made to Chapters 40 and 41, IAC. These changes include:

1. Adjust the maximum contaminant level for fluoride from 2.2 mg/l to 4.0 mg/l.
2. Clarify sampling requirements for fluoride for systems having more than one source.
3. Give the department the authority to alter the frequency for fluoride monitoring under preset conditions.

Mr. Stokes gave a detailed explanation of the proposed fluoride rule revision. He stated that this will be presented as a Notice of Intended Action next month. Discussion followed.

WATER CONSERVATION AND PRIORITY ALLOCATION RULES: REVISIONS TO CHAPTERS 50, 51 AND 52

Allan Stokes, Division Administrator, Environmental Protection Division, presented the following item.

The staff will discuss the proposed amendments and additions to Chapters 50, 51 and 52 of the Iowa Administrative Code, Environmental Protection (567). These amendments include provisions for requiring water conservation and for restricting water withdrawals during severe shortages by category of water use in accordance with the State Water Plan. Authority for these rules comes from changes to the Iowa Code sections 455B.265, 455B.266, and 455B.271.

The proposed rule revisions change the classifications for types of water use in conformance with the priority allocation categories of water use. General provisions for water conservation are made as a requirement for all water withdrawal permits. Specific criteria for emergency conservation have been established for permits for water withdrawal from sources which are susceptible to short-term water shortages. Specific permit conditions for emergency conservation will be based on a water conservation plan prepared by the permittee. Events for triggering emergency conservation and/or priority allocation restrictions are described and the priority allocation plan (455B.266) is reiterated.

A copy of the proposed amendment will be handed out at the meeting.

Mr. Stokes explained in detail the proposed revisions. He stated that this was an information item and will be presented as a Notice of Intended Action next month.

FISCAL YEAR 1988 CONSTRUCTION GRANTS PRIORITY SYSTEM AND PRIORITY LIST

Allan Stokes, Division Administrator, Environmental Protection Division, presented the following item.

The staff will discuss the scheduling and development of the FY88 Construction Grants Priority System List.

The Department of Natural Resources, Environmental Protection Division, is responsible for the Priority System and State Project Priority List.

The Priority System is required by federal regulation to be reviewed annually for needed changes, either as a reflection of changes in federal law which are mandatory changes, or beneficial department changes needed to more efficiently carry out the goals and requirements of the Federal Water Pollution Control Act. At this time, the department is not aware of any mandated changes; and likewise, staff has not identified any needs to alter the Priority System for FY88.

The State Project Priority List is made up of two lists, one a fundable list which is used to identify those projects which qualify to receive the grant funds allotted to Iowa in any one year, and second a planning list which consists of the remaining projects which may utilize future grant funds. Because all of the projects on the State Project Priority List were given a two-year priority ranking starting in FY87, using the Point Source Rating Criteria, the projects will not be rescored for FY88. In effect, for FY88 only a new fundable list needs to be developed while the planning list would remain in the same priority order as during FY87. The draft funding list will be handed out at the meeting.

The following schedule is proposed for adoption of a FY88 State Priority List:

April 13, 1987 -- Draft list to Commission for information
May 18, 1987 -- Proposed Priority List to Commission; Authorization to go to hearing in June
June 30, 1987 -- Public hearing
July 10, 1987 -- Public comment period closes
August 17, 1987 -- FY88 Priority List adopted by Commission
October 1, 1987 -- FY88 Priority List in effect

Discussion followed. This was an information item and no action was needed.

APPOINTMENT -- Dick Burdock

Dick Burdock, farmer from Mitchellville, addressed the Commission regarding water pollution in Camp Creek near the Des Moines Metro Landfill. Mr. Burdock distributed a hand-out showing test results of an orange liquid sample taken 100 feet from Camp Creek. He also distributed photos of 14-ton trucks dumping sludge at the landfill. Included were photos of raw human waste being dumped at the landfill.

Mr. Burdock listed the following items which he and area residents consider to be rule violations:

1. Dumping raw human waste on land not permitted.
2. Dumping treated waste in large amounts without permits.
3. Dumping on frozen ground with a 30 percent incline.
4. Sludge being dumped and not incorporated into the soil after two years.
5. Northwest corner dumping of 416 tons/acre without a permit.
6. Forty-one working days to incorporate during which time the weather was not detrimental to working.

Additionally, he submitted statements from several area farmers stating problems caused their cattle by drinking water from Camp Creek and infiltrations from the landfill.

Mr. Burdock stated that he and area residents would like to request that the following steps be taken:

1. All methane gas be burned off immediately.
2. The hill of garbage be cut down to 30 feet as the original disposition stated.
3. Test neighbors wells for TCE, heavy metal, etc. at the expense of the state of Iowa.

Senator Bill Dieleman addressed the Commission stating that he visited the landfill a few weeks ago and saw what appeared to be violations of dumping of sludge. He mentioned his concerns, as well as those of others who live in the area, regarding what is happening at the landfill.

Dan Bartelma, farmer from Runnels, addressed the Commission stating that the creek flows through his land for about a mile below the landfill and that there have been flagrant violations of regulations governing the landfill. He stated that there should be a solution to disposing of this garbage which is not monetarily inspired, but environmentally inspired.

Allan Stokes responded that there have been situations of improper land applications of digested sewage sludge. Use of digested sewage sludge and land application is a suggested means of dealing with that kind of material. When applied under proper controlled conditions, it can have some beneficial effects towards land.

Mr. Stokes stated that the Metro Landfill had a special waste authorization to take certain amounts of sewage sludge which were to have been mixed in with the waste at the time it was being disposed of, or used as part of the intermediate or top cover in the waste area at the active disposal area.

Department staff has been to the landfill, inspected the facility, and has determined that many of the allegations of the neighbors are founded in that there was inappropriate land application of sewage sludge. There was land application of sewage sludge in areas that were not envisioned or covered under the special waste authorization. There was land application on ground for which a high rate land application permit would have been required that they did not have. There was land application of sludge on areas with slopes of greater than five percent during the winter months, in which the sludge was not incorporated.

Staff has since, using the Department's standard enforcement procedures, given notice of violation to the landfill telling them of matters to be corrected immediately. Staff has also demanded that the landfill provide the department, within the next several weeks, a plan for intermediate siltation control. We have also been working with the landfill to address their leachate collection system to avoid break out of leachate from the landfill.

Mr. Stokes stated that there has been no turn-around in department direction. We have noted violations, have brought them to the attention of the facility and are requiring correction and abatement of the matter. The landfill's special waste authorization has been changed to more rigidly control sewage sludge application, to restate the rules making sure that they understand that "should" is "shall incorporate" and rigidly controlling the amount of sewage sludge that can go to the landfill. It clearly indicates that this would be the last year that we would grant a special waste authorization.

Sampling was conducted by the department on Camp Creek silt bottoms and water. The analysis indicates that the water in Camp Creek is of the quality that we would establish and set for a raw water source for a drinking water supply. Mr. Stokes stated that this does not mean one could or should drink water from the creek without some treatment.

Discussion followed regarding testing neighbors wells on a regular basis, and taking up gradient and down gradient samples. Mr. Stokes stated that there would be no problem with the department sampling wells of neighboring landowners at regular intervals for a limited time, although this could be costly.

Motion was made by Keith Uhl that the Department initiate reasonable off-site water quality monitoring in the proximity of the site and also water quality monitoring sufficient to test the quality of the water downstream near Red Rock Reservoir. Seconded by Wayne Gieselman. Motion carried unanimously.

DES MOINES AREA CARBON MONOXIDE STUDY

Allan Stokes, Division Administrator, Environmental Protection Division, presented the following item.

Phase I of a study to determine the extent of the carbon monoxide problem in Des Moines is complete. This cooperative study involving the Des Moines Area Transportation Planning Committee, Polk County, the Department of Transportation, and the Department of Natural resources shows that much of the Des Moines area can be redesignated as in attainment with the carbon monoxide standard. The report contains the intersection selection procedure, the air quality modeling, and the air monitoring data that supports this conclusion.

A redesignation request will be submitted to the EPA, which when approved will leave only the Central Business District (CBD) with the nonattainment designation. The second phase of the study will focus on the CBD area. The task will be to determine if the standard can be achieved by the December 31, 1987 deadline, and what impact potential traffic control measures will have on modeled air quality violations.

Motion was made by Charlotte Mohr to approve forwarding the redesignation request to EPA. Seconded by Donna Hammitt. Motion carried unanimously.

RECESS
ADJOURNMENT

Chairman Schlutz ^{recessed} adjourned the meeting at 5:10 p.m. Monday, April 20, 1987.

MEETING RECONVENES 8:30 A.M. APRIL 21

The meeting was called to order by Chairman Robert Schlutz at 8:30 a.m. Tuesday, April 21, 1987.

PROPOSED ACTION PLAN FOR SO₂ SIP REVISION

Allan Stokes, Division Administrator, Environmental Protection Division, presented the following item.

The department is requesting approval of the Proposed Action Plan for SO₂ SIP Revision (copy attached).

The department is also requesting approval to initiate action to amend the rules to adopt the federally enforceable standard of 5.0 lbs. SO₂ per million Btu input for existing sources located in 89 counties (other than Black Hawk, Clinton, Des Moines, Dubuque, Jackson, Lee, Linn, Louisa, Muscatine and Scott Counties). This will eliminate the dual standards which presently exist in the 89 counties. If approval is granted, staff will bring a notice of intended action to the Commission in May.

PROPOSED ACTION PLAN FOR SO₂ SIP REVISION

The following is an action plan, schedule, and a list of facilities that will have to be modeled, provided the Commission approves the sulfur dioxide emission limitation modeling study. The study would involve review of emission limits from over 58 major coal-fired facilities with 118 units, in 32 different locations or cities. In order to provide some perspective on this problem, it may be beneficial to provide some of the background for this environmental issue.

Background

The state of Iowa has higher sulfur dioxide emission limits for 89 counties than those approved by the U. S. EPA. Dispersion modeling and monitoring both indicate that our existing limits are not adequate to attain and maintain air quality standards for sulfur dioxide in certain cities. We have confirmed that dispersion modeling is a legitimate means of predicting violations of the health related standards. In both Clinton and Keokuk, violations of the standard were measured by ambient monitors at the locations where the models had predicted the violations would occur. Section 107 of the federal Clean Air Act places modeling equal to monitoring for the purposes of determining attainment status. Previous modeling conducted by the Department as well as private consultant studies indicate that the nonattainment projections for SO₂ include many more cities. EPA has required that the state include a commitment in the FY87 State EPA agreement to revise emission limits for our

existing solid fuel burning facilities based upon source specific modeling analysis. There may be substantial emission reductions required for some facilities.

Failure to resolve this issue may affect the health and well-being of people living in modeled nonattainment areas.

Action Plan Work Elements

The department will utilize only the latest EPA approved models and modeling guidance in developing proposed SO₂ emission standards. The steps required for revision of the standards are as follows:

1. Assemble and review stack dimensions, temperatures, and air flow rates for consistency with stack emission test measurements.
2. Send stack data to sources for verification, requesting 30-day turn-around. In some cases, we may need plot plans and building dimensions for downwash considerations.
3. Load stack data, building dimensions, and terrain information into the computer.
4. Examine ground level concentration results from large grid model runs. Establish a fine grid around receptors showing highest concentrations.
5. If modeled violations are predicted, allowable emission rates will have to be reduced. At locations where there are multiple facilities, individual source contributions must be determined.
6. Reduce allowable emissions as appropriate and remodel. In addition, review meteorological data to see if building wake effects are reasonable in consideration of wind directions and stack to building orientation.
7. Discuss proposed reductions with affected sources. This will allow input on how emission reductions may best be achieved, taking into consideration operational limitations and economics. In some instances, this may involve intersource trades.
8. Propose revision emission limits, compliance determination methodology, and compliance schedules where necessary to the Commission.
9. Publish notice of intended action.
10. Hold public hearing.
11. Provide responsiveness summary and rule recommendations to the Commission for approval.
12. Submit approved SIP revision to EPA for approval.

Resource Requirements

Perhaps the most significant amount of work will be the development of revised emission limits based upon modeling. There are 58 major sources located in 32 cities that will require modeling analysis. This will involve staff time and computer resources. We are planning on devoting two technical staff to work exclusively on the modeling aspects of this project. In addition to the staff resources required, there will be data processing costs. It is estimated that computer time will cost approximately \$20,000, based on loading the EPA approved models on the state's own computer. The cost for using EPA's computer at Research Triangle Park, North Carolina, would be higher.

Rulemaking

After the proposed emission limits have been determined, we will have to go through the rulemaking process to modify the existing SO₂ rule.

Major Solid Fuel-Burning Facilities to be Included in the Sulphur Dioxide Modeling Study

Ames -- Ames Municipal; Iowa State University
Bettendorf -- Iowa-Illinois Gas and Electric; J. I. Case
Boone -- Iowa Electric Light and Power
Buffalo -- Linwood Stone Products; Davenport Cement Company
Burlington -- Iowa Army Ammunition Plant; Iowa Southern Utilities
Cedar Falls -- Cedar Falls Utilities; University of Northern Iowa
Cedar Rapids -- ADM-Corn Sweeteners Plant; Cargill (2); Cedar Rapids Meats;
Iowa Electric Light and Power (2)
Clinton -- Clinton Corn Processing; Interstate Power Company
Council Bluffs -- Iowa Power and Light Company (3)
Davenport -- Oscar Mayer; Ralston Purina
Des Moines -- ADM-Stanley; Armstrong Rubber; Firestone; Iowa Power and Light Company; Monarch Cement Company
Dubuque -- Celotex; Interstate Power Company; John Deere
Eagle Grove -- Ag Processing
Fort Madison -- Consolidated Packaging
Hamburg -- ADC II Ethanol Plant
Humboldt -- Corn Belt Power
Iowa Falls -- Iowa Electric Light and Power
Iowa City -- University of Iowa (2)
Keokuk -- Hubinger Company
Lansing -- Interstate Power Company
Marshalltown -- Iowa Electric Light and Power
Mason City -- Lehigh Portland Cement; Northwestern States Portland Cement
Montpelier -- Eastern Iowa Light and Power
Mount Pleasant -- Mount Pleasant Utilities
Muscatine -- Grain Processing Company; Iowa Electric Light and Power;
Monsanto; Muscatine Municipal
Ottumwa -- Iowa Southern Utilities
Pella -- Pella Municipal
Sibley -- Sibley Municipal
Sioux City -- Iowa Public Service (4)
Spencer -- Corn Belt Power
Waterloo -- John Deere; Iowa Public Service

*Reanalysis of Muscatine area sources to be done in conjunction with stack height SIP requirements.

Mr. Stokes briefed the Commission on the history of the requirements of the Federal Clean Air Act and the Department's previously submitted plans and revisions. He explained that the proposed action is to address the problem of dual standards. The first part of that plan of action would be to take steps to immediately bring our state standards into conformance with the approved federal state implementation plan. Currently, we are at six pounds and we match up in ten counties. We would need to enter into rulemaking a change for the other 89 counties, from eight pounds unlimited, down to five pounds. We would then bring back to the Commission next month, a Notice of Intended Action to commence the rulemaking necessary to conform our standards to the existing state implementation plan.

Mr. Stokes explained that the second phase of the proposal would be to proceed with conducting a modeling study, whereby the Department would review the emission limits for 58 existing coal fired facilities in 32 different cities. These facilities would be modeled using the current approved EPA model.

Mr. Phil Brunk, Iowa Southern Utilities Company, addressed the Commission stating that there is not a sulphur dioxide problem in the state, but there is a political problem with EPA. He stated that the investor owned utilities would support the staff recommendation to revise the Iowa standards to five and six pounds as is currently approved by the federal government. He stated that they are opposed to site specific emission limits modeling as an acceptable means to set emission limits at various plants. It is a very expensive measure done at industry's expense.

A lengthy discussion followed regarding cost of modeling versus monitoring, five and six pound limits, validity and applicability of tests, EPA's modeling system, modeling conditions, and setting emission limits.

Motion was made by Clark Yeager to approve amending the rules to adopt the five and six pound standards to be in compliance with the state implementation plan, and not proceed with the modeling study. Seconded by Charlotte Mohr. Motion carried unanimously.

Linda Appelgate requested the vote be reconsidered as she did not understand what they were voting on.

Chairman Schlutz requested a roll call vote. "Aye" votes were cast by Commissioners Timmerman, Yeager, Hammitt, Uhl, Gieselman, Mohr, Siebenmann and Schlutz. "Nay" vote was cast by Commissioner Appelgate. Motion carried 8 to 1.

PUBLIC PARTICIPATION

Jack Clark of the Iowa Utility Association spoke regarding the previous discussion of the item on sulfur dioxide standards. He stated that when this item was taken from the agenda at the December meeting, Mr. Phil Brunk made a comment indicating that they would appreciate having a meeting with staff

before the proposal would come back to the Commission. Mr. Clark acknowledged that Allan Stokes held a meeting in which they came to agreement on some terms and he appreciated the opportunity to bring those concerns to the Commission today.

RULE CHAPTER 135 -- UNDERGROUND STORAGE TANK

Allan Stokes, Division Administrator, Environmental Protection Division, presented the following item.

Attached are copies of the summary of public comments and the economic impact assessment for the underground storage tank rules. The rules adopted December 16, 1986 were effective January 14, 1987.

Responsiveness Summary Of Public Comments On Chapter 135:

Pursuant to Iowa Code 455B.474, the Environmental Protection Commission adopted amendments to Chapter 135, "Underground Storage Tanks," Iowa Administrative Code. These rules were adopted on December 16, 1986 and were effective when published on January 14, 1987. Public hearings were held on February 3 in Iowa City, February 5 in Council Bluffs, and February 10, 1987 in Des Moines. Comments were accepted until February 20, 1987.

What follows is a summary of the comments received and a brief response.

General Comments:

State regulations should be consistent with U. S. Environmental Protection Agency regulation. Iowa should not finalize regulations until EPA's regulations are final.

Commentor: American Natural Resources Company

Response: State legislation requires that the Commission adopt interim rules for monitoring of underground storage tanks. When EPA adopts regulations, the state regulations will be modified to be identical to the federal regulations.

Comment:

The proposed rules are not strong enough. Secondary containment is needed for all new tanks.

Commentor: League of Women Voters of Iowa, Sierra Club Iowa Chapter

Response: Code Section 455B.474 contains a stringency clause which provides that rules adopted by the Commission shall be consistent with and not more stringent than the U. S. Environmental Protection Agency rules. Since it does not appear that EPA will propose secondary containment for petroleum tanks, the Commission is not prepared to adopt this requirement as a state rule. When EPA adopts final regulations, the state rules will be revised, if necessary, to be consistent with the federal regulations.

Comment:

The Department must have adequate money and resources to enforce the rules. Legislation is needed to require certification of tank installers. Iowa should revise legislation so the state can adopt its own requirements for underground storage tanks.

Commentor: League of Women Voters of Iowa

Response: These comments are perhaps best addressed by the legislature since these items would require legislative action to be implemented.

Comment:

The Iowa DOT and others would appreciate having approved and published DNR "standards" detailing the various construction aspects of the UST program.

Commentor: Iowa Department of Transportation

Response: In many instances, the rules only specify a general performance standard. This allows the use of many different alternatives. The Department was not given the authority to adopt construction standards until EPA did so. Consequently, we were reluctant to establish a lot of detailed design standards in the rules. The approach taken in these rules allows a great deal of flexibility at the expense of uniformity. Perhaps it may be possible to develop recommended practices as guidance rather than rules.

Comments On Specific Portions Of The Rules:

Comment:

135.6(2) Sniffer wells may or may not be an acceptable monitoring system for nonpetroleum tanks. Yet the rules do not allow them if the groundwater is within 40 feet and requires sniffer wells if the water table is greater than 40 feet. For nonpetroleum tanks, DNR staff or a licensed engineer should select the best system considering the substance stored and how it can best be monitored.

Commentor: Shive-Hattery Engineers

Response: Given the large number of substances that are covered by these rules, it is likely that in some situations the monitoring requirements may not be appropriate. The groundwater monitoring well would probably be effective any time the groundwater is within 40 feet. However, there may be situations where the sniffer well will not work because the substance is not volatile. The trend is to store nonpetroleum materials in double wall tanks and use interstitial monitoring. We are not sure how to improve the rule. However, we would grant a variance to the rule to allow a better monitoring system to be installed.

Comment:

135.8(1) and 135.9(1) Visual monitoring to determine if tanks or piping is leaking may prove that leaks are occurring, but will not confirm that a leak has not occurred.

Commentor: Shive-Hattery Engineers

Response: The method of monitoring must be suitable to reasonably determine if a leak has occurred. Visual monitoring will be a reasonable method to determine if leaks have occurred in many situations. Many petroleum substances are easily visible because they form a film on the water surface. There are also gasoline detectors that change colors when in contact with gasoline. These pastes are relatively inexpensive. Visual monitoring represents a low-cost alternative that can be very effective for many situations. However, as the commentor indicates, there will be situations where visual monitoring is not effective and another technique should be used.

Comment:

135.8(2) It is not clear whether groundwater monitoring wells should be inside or outside of the tank excavation pit.

Commentor: Shive-Hattery Engineers

Response: Groundwater monitoring wells can be either inside or outside of the excavation pit as long as they are no closer than one foot or further than twenty feet from the tank. There are situations where it is hard to locate wells in the excavation because the pit has concrete ballast in the bottom. Also, some designers prefer to locate wells outside of the excavation.

Comment:

Definitions: Hydraulic oil storage tanks for vehicle hoists should be deleted from the definition of tanks to be reported.

Commentor: Petroleum Marketers of Iowa

Response: The definition of underground storage tank is presently identical to the federal definition. It is not possible to make the requested change under the present state legislation which requires consistency with the federal regulations.

Comment:

135.8(2) and 135.8(3) New installations that complied with the observation well requirements in IAC 608-5.309(101) should be considered in compliance with section 135.8(2) and 135.8(3).

Commentor: Petroleum Marketers of Iowa

Response: If an installation already has an adequate monitoring system, then the Department would accept that system as meeting our rules. A variance can be issued if necessary. If the system is inadequate, it would need to be upgraded. In many cases, the existing monitoring system can be used as part of the upgraded monitoring system.

Comment:

135.8(3)f Although a minimum of four wells is specified for a tank cluster, no guidance is given for the number of wells needed at a large tank cluster.

Commentor: Iowa Association of Business and Industry

Response: The rule requires that a minimum of four wells be installed. If the facility needs more wells to provide timely leak detection, they should definitely install additional wells. The four well monitoring system should be effective in almost all facilities in detecting leaks. In some situations, more wells will allow quicker detection.

Comment:

135.9(2)d The qualifications of the individuals responsible for monitoring would be desirable information.

Commentor: Shive-Hattery Engineers

Response: This information may be desirable, but it is not essential information. The rule represents the minimum information that is required.

Comment:

135.9(4) The reference to a "company engineer" should be stricken. The term is unclear and is not defined.

Commentor: Brice, Petrides-Donohue; Shive-Hattery Engineers

There is not a need to require that as-built plans be certified by a licensed engineer or land surveyor.

Commentor: Petroleum Markers of Iowa

Response: The term company engineer is intended to mean that a full-time employee of a company can do engineering work for that company without becoming registered. However, if the employee or the company offers this service to the public, then the appropriate licenses are required. While some technicians or service representative may be able to reliably draw these plans, the only means of assuring that the plans are accurate is to require certification by a licensed engineer or land surveyor.

135.10(3)d The type of monitoring required when tanks are removed is not entirely clear. Doing a complete soil analysis would be expensive. However, portable analytical equipment may not provide a low detection capability. It is also not clear what qualifications the testing personnel must have.

Commentor: Shive-Hattery Engineers

Response: Again this provision of the rule provides considerable flexibility as long as the investigation is adequate to determine if a leak has occurred. This may be an area where guidelines or recommended practices

should be developed. Since there are many different situations, it may not be possible to be more specific in the rule.

135.10(2) and 135.11 If the use of a tank changes from storing a regulated substance to storing a nonregulated substance, there should be some provision that allows for a determination that the tank did not leak and the tank should not have to be removed. This could be handled by adding another provision to the variance criteria.

Commentor: Monsanto; Iowa Association of Business and Industry

Response: In those situations where there is adequate information to determine that the tank has not leaked, the Department agrees that the tank would not need to be removed from service and could be used for a nonregulated purpose without future monitoring. In most cases when tanks are removed from service, there is not adequate information about previous leakage and the simplest and least expensive procedure is to remove the tank and check to see if there was leakage. The variance provision as written would allow the issuance of a variance to the situation described by the commentors. The language in 135.11 could also be made more explicit.

Comment:

135.5(2) An in-line leak detector will not work in a system that has continuous pumping.

Commentor: Meredith Corporation

Response: An in-line leak detector tests the piping for a pressure drop each time the pump is turned on. Therefore, if a system runs continuously, there would not be any tests ran. If the pump could be turned off periodically and then turned back on, the leak detector would function. If this is not practical for a given industrial application, a variance could be issued for another type of monitoring of the piping.

At its February, 1987 meeting the Iowa General Assembly Administrative Rules Review Committee voted to request an economic impact statement concerning ARC 7313. This filing relates to underground storage tanks and appears in IX IAB 15 (01-14-87); it proposes numerous amendments to 557 IAC chapter 135. The committee requested that the department estimate what the economic impact will be for the various monitoring, construction and repair standards that are contained in this filing.

RULEMAKING HISTORY

The 1985 Iowa Acts, chapter 162, required the Commission to adopt rules applicable to all owners and operators of underground storage tanks which, in part, are to relate to the detection, prevention and correction of releases from underground storage tanks and standards of performance for new tanks. These rules are to be those necessary to protect human health and the environment.

On July 8, 1986 a public hearing was held to receive comments on the proposed rules. A significant number of oral and written comments were received on the

proposed rules. Upon consideration of these comments, the Commission appointed an advisory panel to study further the proposed rules. Rules were subsequently adopted on an emergency basis which were different than the original proposal. These rules were effective on January 14, 1987 and hearings to receive comments were held in February, 1987.

ECONOMIC IMPACTS BY SECTION

Definitions ---

This item provides additional definitions and has no economic impacts.

135.4 Interim Prohibition

This item lists the interim standards for the installation of new tanks. These requirements are identical to state and federal requirements already mandated by statute. Consequently, the rule does not impose an additional economic cost.

135.5(1)

An annual inspection of all metal tanks and piping which use cathodic protection is required.

The cost of this inspection is approximately \$150 for an annual inspection. The test provides an economic benefit because the useful life of the tank is extended when cathodic protection is provided. The test will identify if the cathodic protection is adequate before corrosion damages the tank.

135.5(2)

An in-line leak detector is required for underground piping on the discharge side of the pump.

It is estimated that an in-line leak detector will cost \$200 per tank. Although the department has not done a survey, it appears that many tank owners have already installed in-line leak detectors. These are not required for suction pipe systems. Therefore, it is not known how many tanks will need to be retrofitted. The in-line leak detector allows for immediate detection of leaks in pressurized piping.

135.5(3)

All tanks must be equipped with a system to detect and prevent an overfill of a tank before any discharge will occur.

Overfill protection devices are already in common usage throughout the industry. For most facilities, this should pose no additional cost. For tanks without any overfill protection, it might cost \$100 per tank to install the simplest type of device. For a typical service station with three tanks, the aggregate cost would be \$300.

NONPETROLEUM SUBSTANCES

135.6(1)

All new tanks must install secondary containment and monitor the interstitial space for leakage.

The cost of the secondary containment provision will depend on the size of the tank and the type of containment device used. One popular approach is a double-wall tank. A double-wall fiberglass reinforced plastic tank could cost \$12,500. This does not include installation cost or consider volume discounts which may be available. A single-wall fiberglass tank costs approximately \$6,000. This is for a 10,000-gallon size which is a typical size. The increase in cost is then about \$6,500 per tank. The double-wall tank is a much more secure storage tank and is commonly used for hazardous chemical storage. The extra cost is offset by the reduction in liability from future leaks and groundwater contamination.

135.6(2)

Existing tanks must have groundwater monitoring wells or may use interstitial monitoring if secondary containment is provided.

The cost per well is likely to range from \$500 to \$1,000. This does not include any volume discount. For a single tank, two wells are required at a total cost of \$1,000 to \$2,000.

PETROLEUM SUBSTANCES

135.7(1)

All new installations must have either sniffer wells, groundwater monitoring wells, or interstitial monitoring.

The initial cost for a sniffer well would be about \$400 to \$500 per well. For a single tank, two wells would be required.

The initial cost for a groundwater monitoring well will depend on the depth to groundwater. The cost for a groundwater monitoring well would typically run from \$500 to \$1,000. For a single tank, two wells would be required.

Interstitial monitoring systems can be considerably different in design and performance. The system can be automatic or it can allow for a manual check. A rough estimate is \$300 to \$1,600 for an adequate interstitial monitor.

The above costs are first time capital costs for each of the monitoring systems. Some systems may not be useful in a given situation. Cost for sample analysis, operation and maintenance costs should also be considered when selecting a system.

135.7(2)

Existing tank installations are required to have monitoring wells, sniffer wells or interstitial monitoring.

The costs for well installation are similar to the analysis for new installations. However, sniffer wells may not be acceptable for existing systems because of the high background levels of volatile organics in the soil. This background interference is common at existing installations because of past leaks or spills. In these cases, the sniffer wells will likely need to be replaced with a more reliable leak detection method.

FOR ALL UNDERGROUND STORAGE TANKS

135.9(1)

Monitoring must be done at least twice a month using a method that will reasonably detect a leak from the tank.

The cost to perform monitoring will depend on the type of monitoring system and the type of material stored in the tank. Petroleum products are by far the most commonly stored substances. A petroleum leak into the groundwater monitoring well can be detected by observing if a petroleum film is apparent on the surface of a water sample. There is essentially no cost involved. A petroleum leak in a sniffer well can be detected with an organic vapor analyzer if the substance is volatile. The cost of instruments to measure organic vapors ranges from \$500 to \$18,000. If the tank owner/operator doesn't want to do the actual monitoring, it is possible that a testing service could be contracted. The cost of this service is not known. The cost to monitor the interstitial system is more of a maintenance cost to keep the system operating. The cost to maintain the system is not known.

135.9(4)

Each facility shall maintain as-built plans of any new tank installation.

The cost of drawing the plans and doing the survey will depend on how complex the project is and how much time it takes to complete the work. Many companies are already producing high quality as-built plans for their own use. In this case, the requirement for professional certification should not pose an additional expense. If additional services are necessary from a licensed engineer or land surveyor, the additional cost is estimated to be \$200.

135.10(1)

This section establishes repair and closure requirements for underground storage tanks. In particular, abandoned tanks generally are required to be removed from the ground and the tank pit monitored to determine if product has leaked.

The additional costs due to this requirement are not clear, since local governments already had closure requirements. The new rule generally discourages in place closure which may be cheaper. The additional cost involved with tank removal is approximately \$400.

Many types of facilities are covered by these rules. For some, the costs of these rules may be minimal if they already have high-quality monitoring systems. In other situations, the cost may be very substantial. To help illustrate the economic impact of these rules, two examples will be provided. The first example is an existing service station with three tanks that must be retrofitted to meet the rules. The second is the additional cost to a new station. These costs are only estimates, and the actual costs will vary considerably depending on site specific factors and the competitive factors.

Example 1 -- Existing Service Station

This example assumes that petroleum products are being stored in three underground storage tanks. The tanks are single wall. The groundwater is

high in this area. Since the station has been in business for several years, there are background vapors in the soil that preclude the use of a sniffer well installation. Consequently, groundwater monitoring wells are selected.

Item	Cost
4 Groundwater monitoring wells	\$3,000
3 In-Line leak detectors	600
3 Overfill protection devices	300

Total Capital Costs: \$3,900

Annual Costs: The groundwater wells must be monitored twice a month. A visual check can be done by the operator at essentially no cost.

Example 2 -- A New Tank Installation

In this case, three fiberglass tanks are installed at a new site. Since background petroleum vapors are not present in the soil, sniffer wells are selected to monitor for leaks. Two observation wells are already required under the Fire Marshall's rules; therefore, only two additional wells are required.

Item	Cost
2 Sniffer wells	\$1000
3 In-Line leak detectors	600
3 Overfill protection devices	300
Professional services	200

Total Capital Costs: \$2,100

Annual cost include twice per month monitoring of the sniffer wells with an organic vapor analyzer. It is estimated that this will cost \$200 a month if this service is contracted. It may be more cost effective to install groundwater monitoring which costs more initially, since visual monitoring can be performed at minimal cost.

ECONOMIC BENEFITS

The above estimates represent the economic costs of the new rules. There are, however, economic benefits to the rules. The rules should reduce the number of leaks or if a leak does occur, the cost of cleanup will be less. One source provides the following cost magnitudes for cleaning up leaks:

+	\$20,000	85% of tank leaks
+	\$150,000	10% of tank leaks
+	\$2,500,000	5% of tank leaks

Based on these estimates, the cost of a tank leak is \$157,000.

EPA estimates that as many as one out of four underground storage tanks leak. If this estimate is accurate, 7,000 underground storage tanks could be leaking in Iowa. The total cleanup cost could exceed \$1 billion. The department is not yet convinced that this is a reasonable estimate of total

cleanup costs. The department currently estimates that 100 leaks a year must be cleaned up at a cost of \$40,000 each. This represents a cost of approximately \$4 million a year. This estimate could be very low if the number of leaks is larger or if the cleanup costs are much higher.

CONCLUSION

It is very difficult to accurately tally all of the costs and benefits that result from these rules. Many of the regulated facilities will already have some or all of the required provisions installed. If the rules are effective in preventing leaks and identifying leaks early when they do occur, cleanup costs can be reduced very substantially. The rules will also provide additional security to the public from the adverse safety hazards posed by leaking underground storage tanks. Finally, the environment, and in particular the groundwater, will be better protected from leaking underground storage tanks.

ENVIRONMENTAL PROTECTION COMMISSION (567) NOTICE OF TERMINATION

Pursuant to the authority of Iowa code section 455.5 and 1985 Iowa Acts, chapter 162, the Environmental Protection Commission gives Notice of Termination of ARC 7313, published in the January 14, 1987, IAB relating to the regulation of underground storage tanks, chapter 135. The Commission emergency adopted these rules on the same date (ARC 7313) and published the Notice of Intended Action in order to obtain further public comment. As a result of the comments received, no changes in the adopted rules will be made, and thus the Notice of Intended Action is terminated.

Date

Larry J. Wilson, Director

Richard Timmerman stated that the subcommittee that worked on the rules was concerned with the terms "company engineer" and "registered licensed engineer." Their feelings were that small businesses would not be able to hire licensed professional engineers and certify the drawings. Additionally, many small businesses may not have a company engineer. A lengthy discussion followed regarding same.

The Commission decided to delay action on this item until the afternoon session to provide time for staff to draft rewording to address these concerns.

PUBLIC COMMENT

Chairman Schlutz stated that he received a request from Mr. Dave Leach to address the Commission and therefore invited him to speak at this time.

Mr. Leach stated that he is concerned with the Groundwater Bill where it states that water treatment is impractical, difficult and expensive to accomplish. He feels this is an error and would like to see it corrected and further stated that water can be purified at no additional cost.

APPOINTMENT -- Donald Cell

Donald Cell, Professor of Economics at Cornell College, presented the Commission with copies of his speech entitled "Environmental Protection: A Matter of Education or Enforcement?" The main point of Professor Cell's presentation was that enforcement, rather than education, is the best tool to use in protecting Iowa's natural resources. In conclusion, Professor Cell pointed out that it is not his wish to attack the importance of moral and scientific education, but that good things like education have their limitations. He stated that he tried to show the Commission why there is no substitute for enforcement.

Discussion followed.

Chairman Schlutz thanked Professor Cell for his presentation to the Commission.

FINAL RULE -- CHAPTER 135, UNDERGROUND STORAGE TANKS (Continued)

Staff, at the Commission's direction, drafted the following sentence to be added to the end of 135.9(4): As used in this subsection, the term "company engineer" shall be interpreted to mean a full-time employee of the company or other person hired to prepare as-built plans required by this subsection who possesses at least a bachelors degree in an engineering discipline.

Motion was made by Richard Timmerman to approve adoption of the Emergency Rule as Final Rule -- Chapter 135, Underground Storage Tanks with the addition of the language to 135.9(4). Seconded by Nancylee Siebenmann.

Chairman Schlutz requested a roll call vote. "Aye" votes were cast by Commissioners Timmerman, Yeager, Hammitt, Uhl, Mohr, Siebenmann and Schlutz. "Nay" votes were cast by Commissioners Appelgate and Gieselman. Motion carried 7 to 2.

APPOINTMENT -- City of Willey

Since this appointment was in reference to an Attorney General referral, Mike Murphy briefed the Commission on the history of this case. Mr. Murphy stated that staff is recommending referral of the City of Willey to the Attorney General to bring action to obtain a court order regarding deficiencies in monitoring their water supply facilities last year. Because of the history which included two administrative orders and a prior attempted referral, staff can see no other way to get the city to comply with the requirements. Since January, the city has complied; but staff would like assurance of ongoing compliance.

Pam Stanzyk, City Clerk, City of Willey, stated that during 1986 the city relied on the Decker family to submit their water samples. She stated that

the Deckers reported at city council meetings that they were sending in the samples. The mayor decided to check it out in December and found out that the Deckers were no longer doing it, so he began doing it himself.

Discussion followed regarding who is responsible for submitting the samples, who received the certified letters, billings for the water sampling, and previous penalties.

Motion was made by Richard Timmerman for referral to the Attorney General's Office. Seconded by Wayne Gieselman.

Chairman Schlutz requested a roll call vote. "Aye" votes were cast by Commissioners Timmerman, Appelgate, Gieselman and Schlutz. "Nay" votes were cast by Commissioners Yeager, Hammitt, Uhl, Mohr and Siebenmann. Motion failed 4 to 5.

The Commission emphasized to Ms. Stanzyk that it is necessary that monitoring of their public water supply must be done in the future.

LEGISLATIVE REPORT

James Combs, Division Administrator, Coordination and Information Division, presented the following item.

Mr. Combs distributed a listing of the summary of all actions that have occurred on four major bills, along with a copy of the Appropriations Bill relating to the DNR. He discussed the status of these bills and explained changes.

Mr. Combs gave an update on the status of the Groundwater Protection Bill stating that it is presently in a joint meeting of the Senate Agriculture and Natural Resource Committees. It should go to Ways and Means Committee tomorrow and is scheduled for debate on Friday. Mr. Combs explained in detail the most recent Senate amendments to this bill.

Linda Appelgate asked if the Commission needs to act on the Economic Impact Statement for the Underground Storage Tank Rules.

Allan Stokes responded that the Commission would technically need to approve it.

Motion was made by Wayne Gieselman to approve the Economic Impact Statement on Chapter 135 -- Underground Storage Tank Rules. Seconded by Donna Hammitt. Motion carried unanimously.

LANDFILL GROUNDWATER MONITORING RULES

Allan Stokes, Division Administrator, Environmental Protection Division, presented the following item.

The Commission is requested to approve a notice of intended action for these proposed rules.

ENVIRONMENTAL PROTECTION COMMISSION (567)
Notice Of Intended Action

Pursuant to Iowa Code section 455B.304, the Environmental Protection Commission proposes to adopt amendments to Chapter 567-100, "Scope of Title-Definitions-Forms-Rules of Practice" and Chapter 567--103, "Sanitary Landfills," Iowa Administrative Code.

In accordance with Iowa Code section 455.304, the Commission is required to adopt rules establishing standards for construction, operation and maintenance of hydrologic monitoring systems in sanitary landfills. In accordance with this authority, the Commission proposes to adopt amendments to existing rules in order to provide quantitative standards and methodology to be used by the landfill authority for applying these standards. These standards are to be applied to facilities which dispose of solid waste by burial.

These rules are effective immediately for all permitted sites. The Department intends to require submittal of all hydrologic monitoring system plans within a three-year period. Plans must be submitted for review within 60 days of receiving notice from the Department.

The Department proposes to give notice to facilities based on the following priority:

1. Facilities with leachate migration problems and/or minimal groundwater monitoring systems;
2. Facilities applying for a new permit or permit amendments which involve major lateral and/or vertical expansion;
3. With notice of permit expiration and prior to renewal.

These amendments may impact sanitary landfills economically and operationally.

Any interested person may file with the director written comments on the proposed amendments through June 22, 1987. Interested persons may also provide oral comments at public hearings to be held in Des Moines, Iowa City, and Council Bluffs as follows:

Tuesday, June 9, 1987 at 3:00 p.m. in the fifth floor conference room of the Henry A. Wallace Building, 900 East Grand Avenue, Des Moines, Iowa; on Wednesday, June 10, 1987 at 3:00 p.m. in the Public Library, 123 South Linn Street, Iowa City, Iowa; and on Thursday, June 11, 1987 at 3:00 p.m. in the Community Hall Room, 205 South Main, Council Bluffs, Iowa.

These amendments to rules are intended to implement Iowa Code section 455B.304.

The following amendments are proposed:

ITEM 1. Amend Rule 567--100.2(455B) by adding the following definitions:

"Annular space" means the open space formed between the borehole and the well casing.

"Aquifer" means a saturated permeable geologic unit that can transmit significant quantities of water under ordinary hydraulic gradients.

"Confining beds" means a geologic formation exhibiting low permeability.

"Down gradient" means direction of decreasing hydrostatic pressure within the same hydrogeologic unit.

"Down gradient well" means a well which has been installed hydraulically down gradient of the site and is capable of detecting the migration of contaminants from the site.

"Ground water flow paths" means a set of intersecting equipotential lines and flow lines representing a two-dimensional steady flow through porous media.

"Hydrostatic pressure" means the pressure exerted by or existing within static water with respect to soil and rock particles comprising the hydrogeologic unit.

"Leachate" means a liquid including any suspended components in the liquid that has percolated through or drained from a solid waste landfill.

"Mean" is the sum of all the measurements collected over a significant period of time divided by the number of measurements.

"Perched saturated zone" is a localized saturated zone occurring above the zone of saturation. The perched saturated zone's presence is caused by a lens of relatively impermeable material within the unsaturated zone that prevents the downward movement of water toward the zone of saturation.

"Piezometers" are generally small diameter wells used to measure the elevation of the water table or potentiometric surface.

"Potentiometric surface (piezometric surface)" is the surface that represents the level to which water from a given aquifer will rise by hydrostatic pressure.

"Site" includes the fill area, nonfill work areas, borrow areas plus a 100-foot-wide perimeter surrounding the working areas or the property line, if it is closer than 100 feet.

"Specific yield" is the amount of water that can be extracted from saturated soil or rock.

"Split spoon sampler" means devices used in conjunction with a drilling rig to obtain core samples from unconsolidated strata.

"Shelby tube" is a thin-walled, seamless steel tube with a sharp cutting edge which is used to obtain undisturbed samples of cohesive or moderately cohesive soils (silts and clays).

"Standard deviation" means the positive square root of the variance.

"Storage coefficient" means volume of water an aquifer releases from or takes into storage based on a decline or rise in head.

"Transmissivity" means the capacity of an aquifer to transmit water through its entire thickness and is equal to the coefficient of permeability multiplied by the saturated thickness of the aquifer.

"Tremie tube" means a tube whereby bentonite or cement slurries are pumped uniformly within an annular space or well casing for sealing purposes.

"Unsaturated zone" is a subsurface zone above the water table which the interstices of a porous medium are only partially filled with water. Also referred to as vadose zone.

"Up gradient" means direction of increasing hydrostatic pressure within the same hydrogeologic unit.

"Up gradient well" means wells which are placed hydraulically upgradient of the site and are capable of yielding ground water samples that are representatives of regional conditions and are not affected by the landfill site.

"Variance" means the average of the squares of the difference between the actual measurement and the mean.

"Water table" means the water level surface below the ground at which the unsaturated zone ends and the saturated zone begins. It is the level to which a well screened in the unconfined aquifer would fill with water.

"Zone of saturation" is a subsurface zone in which the interstitial space of a porous medium is completely filled with water.

ITEM 2. Amend Rule 567--103.2(2)(455B) by deleting paragraphs j. and k., and relettering the remaining paragraphs.

ITEM 3. Amend Chapter 567--103(455B) by adding the following subrule:
567--103.2(3) Hydrologic Monitoring System Plan and Operating Requirements

- a. General requirements
- b. Hydrologic monitoring system planning requirements
 1. Prepared by Iowa P.E.
 2. Preliminary planning report
 3. Groundwater monitoring system plan
 - a) Siting and construction
 - b) Piezometers and observation wells
 - c) Monitoring well identification
 - d) Well construction log
 - e) Special, nonconventional and additional monitoring points
 4. Monitoring well maintenance performance evaluation plan
 5. Surface water monitoring system
 6. Sampling protocol
- c. Hydrologic monitoring system operating requirements
 1. Record keeping and reporting
 - a) Soil/rock types records
 - b) Records of analyses
 - c) Quarterly report of impact on water
 - d) Annual report of impact on water
 - e) Results from well maintenance and performance reevaluation plan
 2. Operational sampling requirements
 - a) Parameters
 - b) Data analysis
 - c) Additional results submittal
 3. Groundwater quality assessment plan
 - a) Plan submittal/approval
 - b) Plan implementation
 - c) Groundwater quality assessment report
 - 1) No contamination present
 - 2) Contamination present
- d. Post-closure monitoring requirements
 1. Post-closure 20-year monitoring program plan
 2. Post-closure 20-year monitoring program plan for landfills not having approved hydrologic monitoring system
 3. Departmental five-year review
 4. Site-specific additional monitoring requirements

567--103.2(3) Hydrologic monitoring system planning and operating requirements.

- a. General requirements.

1. The owner or operator of a solid waste disposal facility shall operate and maintain a hydrologic monitoring system which includes a sufficient number of groundwater monitoring wells to determine the quality of the ground water and the impact, if any, that the sanitary disposal project is having on the adjacent groundwater. The hydrologic monitoring system shall be planned, designed, constructed and operated in accordance with the provisions contained in Chapter __, Hydrologic Monitoring System Standards (hereinafter referred to as the Standards), in Standards for the Design, Construction and Operation of Sanitary Disposal Projects.

2. Contractors involved in soil boring operations as well as construction of monitoring wells, observation wells, and piezometers shall be registered with the department as required in Chapter 567--37 (455B), Iowa Administrative Code.

b. Hydrologic monitoring system planning requirements.

1. The Hydrologic Monitoring System Plan shall be prepared by a professional engineer registered in the state of Iowa and submitted to the department for approval. The purpose of the plan is to provide the geotechnical and hydrologic basis for the design and installation of ground and surface water monitoring system. The plan shall address the items as shown in Standards B.2. through B.5.

2. Prior to any on-site hydrologic investigative work, the owner/operator shall submit a hydrologic monitoring system plan preliminary report as is detailed in Standard B.1. Upon approval of the report by the department, the investigative work may commence.

3. Ground water monitoring system.

a) After the Hydrologic Monitoring System Plan is approved by the department, the system shall be sited and constructed in accordance with Standard B.3, monitoring well system plan.

b) Piezometers and observation wells shall be designed and constructed to accurately measure the head in the portion of the aquifer or formation immediately surrounding the base of the well. The design shall be based on the hydrologic properties of the formation being monitored in order to minimize the time lag between fluctuations in potentiometric head outside the monitoring point and the water level in the monitoring point. If the lag time cannot be minimized through design and development, alternative design shall be used. Piezometers and observation wells that will be also used as sites for ground water quality monitoring shall comply with the requirements contained in Standards B.3.e.

c) All wells shall be clearly and permanently marked with a unique number. All sanitary landfills required to monitor shall utilize a uniform identification system as shown in Standard B.2.

d) Well construction log. Well construction information shall be contained in the well construction log. One copy of the log shall be permanently retained at the site. At a minimum, the log shall contain the items shown in Standard B.3.c. The engineer shall furnish a technical summary of the well log data to the department for review. A copy of the actual well logs shall be submitted to the geological survey bureau for their analysis.

e) Special, nonconventional and additional monitoring points.

The owner or operator shall provide monitoring points or instrumentation other than conventional monitoring wells, if best engineering judgment shows these installations are necessary to satisfy the requirements of Rule 103.2(3)a.1. The department may require installation of monitoring devices in the unsaturated zone beneath the facility to measure how effectively the facility contains leachate or to enable the early detection of leachate release. The department may require separate monitoring points whenever needed to monitor conditions other than water quality including potentiometric head and ground water flow. Before any monitoring point is added to the monitoring system, or abandoned, or changed in construction, the owner or operator shall submit the design and description of the proposed actions to the department for review and approval. The department may require additional monitoring points at locations or depths on or off the waste management boundaries whenever necessary. The points shall be sited and/or constructed in accordance with Standards B.3.d. and B.3.e.

4. Monitoring well maintenance performance reevaluation plan. The owner and operator shall prepare a monitoring well maintenance performance reevaluation plan to ensure that all monitoring points remain reliable. The plan shall be submitted to the department for approval at the time of submission of the hydrologic monitoring system plan. The results of activities and tests required by the plan shall be submitted with the annual report records. At a minimum, the plan shall contain items included in Standard B4.

5. Surface water monitoring system. Surface water shall be monitored in instances where leachate may potentially discharge into surface water. River or stream monitoring shall take place upstream and downstream from the landfill site as well as the point of potential discharge. Standing bodies of water shall be monitored at the apparent point of discharge as well as at apparently unaffected points. Sampling points shall be clearly and permanently marked as shown in Standard B.3.b.

6. Sampling protocol. As a part of the hydrologic monitoring system plan, the owner or operator shall develop a sampling protocol that describes in detail procedures for sampling and field testing. The owner or operator shall ensure the protocol is followed when the monitoring system is sampled or measured. The sampling protocol shall be reviewed annually by the owner or operator and by the firm or persons who actually do the sampling and shall be revised as necessary to reflect changes in the monitoring system or the sampling procedures. The sampling protocol shall be carried out during the active life and post-closure period of facility operations. The protocol shall be submitted to the department for approval. The protocol shall include procedures/descriptions as shown in Standard B.5.

Hydrologic monitoring system operating requirements.

1. Record keeping and reporting.

a) Accurate records shall be kept of the soil or rock types encountered during well installation. If a drilling method is used that does not provide the required soil information, a pilot hole or separate soil boring adjacent to the monitoring well shall be drilled to provide the necessary information. If the owner or operator believes that the soil logging requirements are unnecessary or infeasible for a particular monitoring point, they may submit to the director a written explanation of why alternative methods should be used, together with a request for approval to use these methods.

b) The owner or operator shall keep records of analyses, the associated ground water surface elevations and simple field records for the active life and post-closure period of facility operations. These records shall be kept at the site or in the administrative files of the owner or operator, and shall be available for review by the department upon request.

c) The owner or operator shall provide the department with copies of the quarterly monitoring analytical results by the dates specified in the facility's operation permit. Analytical results shall be reported on forms provided by the department.

d) An annual report summarizing the effect the facility is having on ground and surface water quality shall be submitted to the department by November 30 each year. The summary is to be prepared by an engineer registered in the state of Iowa and incorporated in the November semi-annual engineer inspection report. The contents of this summary are to include those items listed in Standard C.1.a.

e) Results of activities and tests required by the well maintenance and performance reevaluation plan described in Standard B.4. shall be submitted to the department.

2. Operational sampling requirements.

a) Parameters. The owner or operator shall determine the concentration or value of certain parameters in ground and surface water in accordance with Standard C.2.d.

b) Data analysis. For each monitoring parameter specified in Standard C.2.d.1), 2) and 3) plus any additional parameters deemed necessary by the department, the owner or operator shall determine if the analytical results fall within the control limits of \pm two standard deviations of the background level. If the analytical results for the wells do not fall within the control limits \pm two standard deviations of the background level, the owner or operator shall submit this information to the department within 30 days of receipt of the analytical results. The department will determine if additional ground water sampling is warranted. The department may require any additional samples to be split and analyzed to determine if the values obtained outside the control limits were the result of laboratory error.

c) Additional results submittal. Any additional analytical results required by 2.b) above shall be submitted to the department by the owner or operator within seven days of receipt. The department will review the information provided by the owner or operator and determine if further monitoring or the preparation of a ground water quality assessment plan is necessary.

3. Ground water quality assessment plan.

a) If leachate migration occurs and as required by the department, the owner or operator shall develop and submit for approval a specific plan to conduct a ground water quality assessment study at the facility to determine the rate of migration, extent and constituent composition of the leachate release. At a minimum, the assessment monitoring plan must contain the elements listed in Standard C.2.

b) After the plan has been approved by the department, the owner or operator shall implement the plan as soon as technically feasible.

c) Within 30 days after the activities prescribed in the ground water assessment plan have been completed, the owner or operator shall submit a written ground water quality assessment report to the department.

1) If the department determines that no waste or waste constituents from the facility have entered the ground water, the owner or operator shall reinstate the routine monitoring program described in Standard B.5.

2) If the department determines that waste or waste constituents from the facility have entered the ground water, the owner or operator shall:

(a) Continue to make the determinations described by the assessment plan (Standards C.2.g. and C.2.i.).

(b) Develop a remedial action plan to alleviate the contamination.

d. Post closure monitoring requirements.

1. At least six months prior to closing the site, the owner or operator of a sanitary landfill with an approved hydrologic monitoring system constructed and operated in accordance with these rules shall submit a plan to the department for approval detailing a 20-year post-closure monitoring program. The plan at a minimum must discuss those items contained in Standard D.

2. Owners or operators of sanitary landfills not having an approved hydrologic monitoring system in accordance with these rules shall submit a hydrologic monitoring system plan to the department at least one year prior to closure. This plan shall include a post-closure monitoring plan in accordance

with Rule 567 IAC 103.2(3)d.1.

3. The department will review the facility's monitoring records at five-year intervals to determine if changes in the monitoring frequencies or parameters are required.

4. The Commission may adopt rules on a site-specific basis identifying additional monitoring requirements for sanitary landfills for which the post-closure monitoring period is to be extended.

ITEM 4 Adding the following standards to the department's design and construction standards for waste management facilities:

STANDARDS OUTLINE

Chapter

Hydrologic monitoring system standards for solid waste disposal facilities

A. General requirements

B. Hydrologic monitoring system planning requirements

1. Preliminary planning report
2. Soils and hydrogeologic investigation planning¹
 - a. Geologic cross section
 - b. Soil borings
 - 1) Location of borings
 - 2) Drilling methods
 - 3) Depth of borings
 - 4) Lab analysis
 - a) Permeability
 - b) Particle size analysis
 - c) Additional lab tests
 - c. Detailed descriptions of hydrogeologic units
 - d. Identification of ground water flow paths
 - e. Identification of surface water flow paths
 - f. Assessment of current ground water quality
 - g. Inventory of all active and abandoned wells within one mile of the facility.
 - h. A discussion of recharge rates
 - i. Assessment of current surface water quality at the site
3. Monitoring well system plan
 - a. Piezometers and observation wells
 - b. Uniform monitoring point identification system
 - c. Well construction logs
 - d. Monitoring well siting requirements
 - e. Construction standards
 - 1) General consideration
 - 2) Casings
 - 3) Well screens
 - 4) Filter pack
 - 5) Grouting
 - 6) Well protection
 - 7) Well drilling
 - 8) Well development
 - 9) Sealing abandoned wells and bore holes
4. Monitoring well maintenance performance reevaluation plan
 - a. Biennial examination of high and low water levels
 - b. Biannual evaluation of water level conditions
 - c. Annual well depth measurements
 - d. Five-year pumping tests

5. Sampling protocol
 - Procedures/description to be included in protocol document
 - a. Order of sampling
 - b. Tests and procedures
 - c. Equipment and containers
 - d. Well evacuation
 - e. Quality assurance samples
 - f. Field filtration of samples
 - g. Procedures for sample presentation
 - h. Sample collection
 - i. Recording field observation and measurements
 - j. Records maintenance and data analysis
 - k. Sampling of surface water monitoring points
- C. Hydrologic monitoring system operating requirements.
 1. Record keeping and reporting (annual report)
 - a. SWA - accepted wastes
 - b. Narrative describing impact on water quality
 - c. Concentration versus times graphs
 2. Operational sampling requirements
 - a. Equipment
 - b. Water surface elevation (in well)
 - c. Recording of procedures, measurements and observations
 - d. Required parameters
 - 1) Parameters characterizing drinking water suitability
 - 2) Routine monitoring parameters
 - 3) Parameters used as indicators of ground water contamination
 - e. Ground water background concentrations
 - f. Initial background arithmetic mean, variance and standard deviation
 - g. Quarterly sampling
 - h. Quarterly sampling analyses
 - i. Laboratory procedures
 - 1) Quality assurance program
 - 2) Analyses per EPA SW-846
 - 3) Department-provided forms
 3. Ground water quality assessment, plan elements
 - a. Discussion of hydrogeologic conditions
 - b. Description of present monitoring systems
 - c. False contamination indicators
 - d. Leachate migration measurement procedures
 - e. Number, location and depth of initial wells
 - f. Information on well design and construction
 - g. Description of sampling and analytical program
 - h. Description of data collection and analysis procedures
 - i. Schedule for the implementation of each phase of assessment study
- D. Post-closure monitoring requirement program elements
 1. Maintenance of ground and surface water monitoring
 2. Record retention and report submittal
 3. Continuation of monitoring (567 IAC 103.2(3)c.)
 4. Data analysis procedures

Chapter
Hydrologic Monitoring System Standards For
Solid Waste Disposal Facilities

A. General Requirements.

1. Rule 567 IAC 103.2(3)a.1 requires that the hydrologic monitoring system be planned, designed, constructed and operated to accomplish at a minimum the following:
 - a. To obtain samples that are representative of the water quality in portions of the ground water or unsaturated zone the individual monitoring points are intended to sample.
 - b. To obtain samples that are representative of surface water quality.
 - c. To allow the early detection of the escape of pollutants from a sanitary landfill.
2. Rule 567 IAC 103.2(3)a.2. requires that any and all contractors involved in soil boring operations as well as construction of monitoring wells, observation wells and piezometers be registered with the department as stated in Chapter 567 IAC 37(455B).

B. Hydrologic Monitoring System Planning Requirements. All plans, specifications and other documentation required by Rule 567 IAC 102.2(3) and submitted to the department for approval must be developed by an engineer registered in Iowa.

1. Preliminary Planning Report. Rule 567 IAC 103.2(3)b.2 requires submission of a preliminary report prior to any actual on-site hydrologic investigative work. However, nonboring geologic analysis may be done on a potential site without submitting a report to the department. As a minimum, the preliminary report must discuss:
 - a. Details of the proposed field work.
 - b. Planned locations for soil borings.
 - c. Testing methods (field and laboratory).
 - d. Soil sampling and classification methods.
 - e. Proposed location, depth, screened interval, casing diameter and other construction details for piezometers and observation wells.
 - f. Proposed location and details of surface water observation points.
 - g. Frequency, number and method of water level measurement.

- h. Types of maps, cross sections, flow nets and other work products and supporting data that are expected to be produced.
 - i. Assessment of current surface water quality at the site.
2. Soils and Hydrogeologic Investigation Planning.

In order to comply with rule 567 IAC 103.2(3)b., the hydrologic monitoring system plan must, at a minimum, contain the following:

- a. Geologic sections of sufficient number and spacing (no fewer than four at every site) to adequately define all areas of the site and of sufficient detail to adequately depict major stratigraphic and structural trends and reflect geologic structural features in relation to groundwater flow.
- b. Soil borings of sufficient number and spacing (no fewer than ten at every site) located in such a manner to adequately define the entire site and accurately represent the geologic variations of the site.
 - 1) Borings shall be located to represent all geologic conditions on the site. For a new site of ten acres or less, at least ten borings are required to describe the hydrologic setting in sufficient detail. Twenty borings are required for sites of ten to fifty acres. Sites larger than fifty acres are required to have twenty borings plus an additional boring for every ten acres over fifty acres. Fewer borings may be needed for existing sites, depending on the quality of previous work done on the site. The Department may require additional borings based on the geological complexity of the site.
 - 2) The preferred drilling method is hollow stem auger, although it may be necessary to use other methods at greater depth. Samples are to be collected with a split spoon or similar sampling device. Samples are to be taken at every change in strata and every 2 to 2.5 feet to a depth of 10 feet below the base of the fill then every 5 feet thereafter.
 - 3) All borings must extend a minimum of 25 feet deep, or at least 10 feet below the permanent water table. A minimum of one boring must extend at least 50 feet deep, or at least 10 feet into the bedrock stratum. Additional deeper borings may be required to define the site.
 - 4) Laboratory analysis of soil properties! Based on a review of water well records, existing soil borings and in-field examination of soil samples, the soil strata which significantly affect the site's hydrology must be identified. Once these strata are identified, their physical and hydraulic properties must be determined so

that an estimate of their ability to transmit or restrict ground water movement can be made. Quantifying soil properties should include both laboratory and field testing. The samples selected for laboratory analysis should be representative of each stratum. Samples should be preserved and transported to the laboratory in accordance with American Standard Testing Methods (ASTM) Standard D 4220.

- a) Permeability. Permeability tests must be conducted on thin-walled tube samples. This may be accomplished by extrusion, trimming and isolation of the sample within a flexible membrane or other appropriate methodology. Such a test quantifies the vertical permeability of the enclosed sample. If the analytical results from several samples of the same stratum are within the same order of magnitude, it will usually be unnecessary to test all the samples collected from that stratum.
 - b) Particle size analysis. Particle size analysis should be conducted by American Standard Testing Methods (ASTM) D 422 and ASTM D 1140. Analyses must be conducted on a sufficient number of samples to assist in correlating soils across the site and for design of the monitoring wells.
 - c) Additional laboratory tests. Additional scientific and engineering tests must be conducted when so directed by the Department.
- c. Detailed descriptions of the hydrogeologic unit(s). Description of the hydrogeologic unit(s) within the saturated zone including thickness, depth, hydraulic properties such as transmissivity and storage coefficient or specific yield, description of the role of each as confining beds, aquifers or perched saturated zones, and their actual or potential use as water supply aquifers. If it is determined that the uppermost hydrogeologic unit is directly connected to one or more other hydrogeologic units, then those units must be described in detail as well.
- d. Identification of ground water flow paths.
- 1) Establish the direction of ground water flow paths including both the horizontal and vertical components of flow. The potentiometric head must be mapped for the uppermost saturated zone encountered and for successive underlying zones until downward components of flow are no longer encountered. A series of piezometers or observation wells must be installed to enable these determinations to be made. Measurements of the range of potentiometric fluctuations must be recorded at the time of drilling, 24 hours later, 48 hours later, then

periodically for at least two months. The Director may approve alternate methods to determine these fluctuations.

- 2) Establish the seasonal, temporal and artificially induced variations in ground water flow. Temporal variations would occur due to natural events, such as floods. The addition of tilelines, removal of overburden or deposition of wastes would constitute artificially induced variations.
- e. Identification of surface water flow paths.
- f. Assessment of current ground water quality of all aquifers potentially or currently impacted by the disposal site and their potential for development as a drinking water source.
- g. An inventory of all active, unused and abandoned wells within one mile of the facility and of high-capacity wells and public water supply wells within three miles of the facility including well logs and all other available information on their construction, static water levels and usage. The inventory must be based on thorough reviews of state and local collections of water well logs and interviews or surveys of all well owners.
- h. A discussion of the change(s) in recharge rates of the hydrogeologic unit(s) that have occurred or will occur due to the presence of the facility.
- i. The ambient surface water quality (if applicable) will be determined by having samples analyzed for the parameters listed in Standard B.5.b.

3. Monitoring Well System Plan

- a. Rule 567 IAC 103.2(3)b.3.b) states that piezometers and observation wells shall comply with construction standards B.3.e.
- b. Rule 567 IAC 103.2(3)b.3.c) requires a uniform monitoring point identification system for all sanitary landfills. The various types of monitoring facilities will be designated as follows:

Upgradient Well	UW#	___
Downgradient Well	DW#	___
Upgradient Surface Point	US#	___
Downgradient Surface Point	DS#	___
Piezometer (If Separate)	PZ#	___
Observation Well (If Separate)	OW#	___

Each monitoring point or well must have a distinct number regardless of the type of monitoring facility that it is. Therefore, for example, if an upgradient well later becomes a

downgradient well because of hydrologic changes, the number will remain the same, but, for example, UW#2 will become DW#2.

c. Rule 567 IAC 103.2(3)b.3.d) requires well construction logs to include the following items:

- 1) Date of the boring.
- 2) Name and address of the driller.
- 3) Drilling and soil sampling methods.
- 4) Surveyed location.
- 5) Soil and rock classifications.
- 6) Field observations.
- 7) Water level measurements (± 0.01 ft.)
- 8) Well casing material, inside diameter and weight or wall thickness.
- 9) Well screen material type and slot width.
- 10) Methods and materials used to join casing and screen.
- 11) Grouting schedule and materials.
- 12) Casing elevation (± 0.01 ft.)
- 13) Ground surface elevation (± 0.01 ft.) at monitoring well location.

d. Monitoring Well Siting Requirements.

The ground water monitoring system must be capable of yielding water samples for analysis and must consist of:

- 1) Monitoring wells (at least one) installed hydraulically upgradient from the limit of the waste management area. Their number, locations and depths must be sufficient to yield ground water samples that are:
 - a) Representative of ground water quality near the facility.
 - b) Not affected by the facility.
 - c) Obtained from the same stratigraphic horizon(s) as the down gradient wells to ensure comparability of data.

- 2) Monitoring wells (at least three) installed hydraulically downgradient within 10-25 feet of the liner or waste boundary. Their number, location, spacing and depth must provide a high level of certainty that releases of waste or waste constituents from the waste management area to the uppermost aquifer will be immediately detected. At a minimum, in directions directly down gradient of the facility, monitoring wells in each aquifer or portion of the flow system must be spaced no more than 300 feet apart. For those facilities which are long-term, multi-phase operations, the department may establish temporary waste boundaries in order to define locations for monitoring wells.

e. Construction Standards.

- 1) General Considerations.

- a) To the extent possible, all monitoring well construction materials must not absorb, desorb, react or otherwise alter the quality of the ground water being sampled. Galvanized metal, glues, welding solvents, pipe thread lubricants and other foreign substances must not be used.
- b) All monitoring well construction materials must be protected from contamination prior to installation.
- c) A typical cross section of a properly constructed monitoring well is shown in Figure 1.

- 2) Casings.

- a) As a minimum, the diameter of the inner casing (see Figure 1) of a monitoring well must be at least 2" in order to:
 - (1) Minimize the evacuation volume of water prior to sampling.
 - (2) Ensure in low permeability soils that water levels within the well recover as quickly as possible after evacuation.
 - (3) Accommodate devices for removing water prior to sampling and measurement.
 - (4) Allow the use of well development tools.
- b) Plastic cased wells must be constructed of materials with threaded, nonglued joints which do not allow water infiltration under natural subsurface pressure conditions or when the well is evacuated for sampling.

- c) Well casings must provide structural stability to prevent casing collapse during installation as well as drill hole integrity when installed.
- d) Well casings must be constructed of inert materials such as polytetrafluorethylene, stainless steel or polyvinyl chloride. The Department may approve other casing materials if the owner or operator can demonstrate the material has a low potential for biasing the water quality parameters of samples. The Department may approve the construction of composite well casings (casings with less inert materials in the unsaturated zone).

3) Well Screens.

- a) Slot size will be based on sieve analysis of the sand and gravel formations or filter pack. The slot size must hold out 35 percent to 60 percent of the formation material and not less than 90 percent of the filter pack.
- b) Slot configuration and open area must permit effective development of the well.
- c) Screen Length.
 - (1) The screen must be of sufficient length to accommodate expected seasonal fluctuations of the water table, but at no time less than two feet in length.
 - (2) The entire thickness of the uppermost water bearing zone must be screened.
 - (3) The screen must be at least two feet and not more than five feet in length.
 - (4) If the uppermost water bearing zone's thickness makes compliance with B.3.e.3)c)(2) and (3) impossible, multiple (nested) wells screened at different depths must be installed.
 - (5) Multiple screened single-cased wells are prohibited.

4) Filter Pack.

- a) To prevent other materials from coming in contact with the well screen, extend the filter pack at least 18 inches above and at least 12 inches below the well screen.

- b) Size must be based on sieve analysis of sand and gravel formation. The filter pack material must be 2.5 to 3 times larger than 50 percent grain size of the zone being monitored.

5) Grouting.

- a) The annular space above the screened section must be sealed with expanding cement or bentonite grout. The vertical dimension of this seal must be a minimum of three feet.
- b) The annular space between the seal and to just below the frostline must be backfilled with an impervious material such as bentonite or, expanding cement. Backfill in such a manner to:
 - (1) Protect the aquifer for the purpose of maintaining quality or preserving the hydraulic response of the water producing zone.
 - (2) Protect the aquifer against entry of unwanted water from the surface or a subsurface zone.
- c) The remaining annular space must be grouted with expanding cement to the ground surface.
- d) Grouting materials must be installed from the top of the filter pack up in one continuous operation with a tremie pipe.

6) Well Protection.

- a) Plastic cased wells. A protective metal casing must be installed around the well casing. The inside diameter of the protective metal casing should be at least two inches larger than the outside diameter of the well casing. Extend the protective metal casing from a minimum of one foot below the frostline to slightly above the well casing top. The protective casing should be shortened or omitted if it covers part of the well screen. Seal or immobilize the protective casing with a concrete plug around the outside. The bottom of the concrete plug must extend at least one foot below the frostline. The concrete plug should be shortened if it covers part of the well screen. Extend the top of the plug approximately three to six inches above the ground surface and slope it away from the well approximately three feet. Soil may be placed above the plug. Seal the inside of the protective casing with a bentonite slurry. Place a vented cap on the well casing and a

protective locking cap on the metal casing. The lockable cap must be kept locked when the well is not in use.

- b) Metal cased wells. Extend the concrete plug from at least one foot below the frostline to approximately three to six inches above the ground surface and slope it away from the well approximately three feet. Soil may be placed on top of the concrete plug. Place a vented, locking cap on the casing. The lockable cap must be kept locked when the well is not in use. See Figure 1.
- c) To protect against accidental damage, a ring of brightly colored posts or other protective devices must be installed around all wells.

7) Well Drilling.

- a) Use drilling techniques which:
 - (1) Introduce the least amount of foreign material into the bore hole.
 - (2) Produce the least possible disturbance to the formation.
 - (3) Permit the well to be grouted properly.
- b) The owner or operator must ensure that in all phases of drilling, well installation and completion, the methods and materials used do not introduce substances that may alter the results of water quality analyses.
- c) Well drilling equipment coming into contact with contaminants in the bore hole or above ground must be thoroughly cleaned to avoid spreading contamination to other depths or locations. Contaminated materials or leachate from wells must not be discharged onto the ground surface or into ponds or streams in the processes of drilling or well development.
- d) The owner or operator must insure that, at a minimum, the following well design and construction information are retained at the site and a copy of this information sent to the Department.
 - (1) Date/time of construction;
 - (2) Drilling method and drilling fluid used;
 - (3) Well location (± 0.5 ft.);
 - (4) Well name/number;
 - (5) Bore hole diameter and well casing diameter;
 - (6) Well depth (± 0.1 ft.);

- (7) Drilling and lithologic logs;
- (8) Casing materials;
- (9) Screen materials;
- (10) Casing and screen joint type;
- (11) Screen slot size/length;
- (12) Filter pack material/size; (depths from _ to _)
- (13) Filter pack volume;
- (14) Filter pack replacement method;
- (15) Sealant materials; (depths from _ to _)
- (16) Sealant volume;
- (17) Sealant placement method;
- (18) Backfill material used (depths from _ to _)
- (19) Surface seal design/construction; (depths from _ to _)
- (20) Type of protection well cap;
- (21) Ground surface elevation (± 0.1 ft.)
- (22) Well cap elevation (± 0.01 ft.);
- (23) Top of casing elevation (± 0.01 ft.); and
- (24) Detailed drawing of well (include dimensions).

8) Well Development.

- a) Well Development - Prior to use of the monitoring well for water quality monitoring purposes, well development is required to ensure the collection of representative ground water samples. Procedures used in well development involve using a surge block, bailing or surging by pumping to produce a movement of water at alternately high and low velocities into and out of the well screen and gravel pack in order to break down the mud pack on the well bore and loosen the fines in the materials being monitored. Development of low hydraulic conductivity wells may require the circulation of water down the well casing, out through the screen and gravel pack, and up the open bore hole prior to the placement of grout or seal in the annulus. Any additional water used must be of a quality so as not to interfere with future ground water quality determinations. Following surging, the well is pumped until the water does not contain sufficient quantities of suspended solids to interfere with the analysis of samples.

- (i) The owner or operator must insure that, at a minimum, the following well development informational items are recorded for each well:

- (a) Date, time and elevation of water levels in well, taken before and after development,
- (b) Method used for development,
- (c) Time spent developing the well,
- (d) Volume of water removed,
- (e) Volume of water added to well (if any),

- (f) Source of water added to well,
- (g) Chemical analysis of added water (if not from the same formation within 100 feet of this well),
- (h) Clarity of water before and after development,
- (i) Presence of sediment at bottom of well.

A copy of the above information must be retained at the landfill site and a evaluation summary of all of the wells must be sent to the Department.

- b) Stabilization and Recovery Rate Tests - The owner or operator of the site must ensure stabilization or recovery rate tests are conducted on each well to determine the rate and length of time the well must be pumped before each sampling in order to obtain water from the geologic materials being monitored. The testing must be conducted under the supervision of a qualified professional engineer registered in the state of Iowa.

(1) Stabilization Tests.

- (a) Pumping Method - Pump the well to waste at a rate less than that used for well development but still yielding a constant stream of water without dewatering the well. The pump should be placed just above the top of the screen so that all water standing in the well above the screen is drawn out. The pumping must be continued until specific conductance, pH and temperature, measured in the field at five-minute intervals, yield three successive values within ± 10 percent of each other by individual parameters.
- (b) Bailing Method - Three well volumes should be bailed before specific conductance, pH and temperature measurements are taken. Subsequent measurements for specific conductance, temperature and pH should be taken on successive well volumes until three successive readings yield ± 10 percent of the three values.
- (c) Record the results of the stabilization test and maintain with other well construction records.

- (2) Recovery Rate Tests - It is permissible on low hydraulic conductivity wells to conduct a recovery rate test rather than a stabilization

test. A recovery rate test consists of removing the water from a well casing to the top of the screen, then measuring the recharge rate of the well. The water may be removed by bailing or pumping. Avoid creating unnecessary turbulence in the well. The well recovery rate water levels are measured at ten-minute intervals for the first hour. Subsequent water level measurement intervals are based on the recharge rate. Record the results of the recovery rate test and maintain with other well construction records. Other tests may only be used if approved by the Department.

- c) Pumping Tests - Conduct tests by pumping each well at a rate of 100 to 1000 milliliters per minute for two to four hours. Do not pump at a rate greater than that used for well development. Do not expose the well screen to the atmosphere. Record water levels every 15 minutes during and after the test until the water level stabilizes. The data obtained from each pumping test must be retained at the site. The pumping tests must be conducted under the supervision of a consultant with expertise in hydrogeology.

9) Sealing Abandoned Wells and Bore Holes.

- a) Bore holes, piezometers and observation wells not used for ground water monitoring must be sealed. The basic concept governing the proper sealing of abandoned ground water monitoring wells and bore holes is the restoration, as far as feasible, of the hydrogeologic conditions that existed prior to well construction and bore hole drilling. Document in writing the location of the abandoned well or bore hole with reference to the landfill's coordinate system and method of sealing. The document must be retained at the landfill with a copy sent to the Department.

- (1) Sealing Bore Holes - Fill the bore hole by extending a tremie tube to the bottom of the hole. Apply bentonite or expanding cement grout through the tube to the bottom of the hole and raise the tremie tube as the hole is filled from the bottom upward. Keep the end of the tremie tube submerged in the grout while filling. Fill the boring hole from the base of the boring all the way to the ground surface.

(2) Sealing Abandoned Monitoring Wells.

- (a) Well Is Known To Be Constructed Properly With Impermeable Grout That Was Installed

From The Bottom Up Using A Tremie Tube - Remove any existing protective metal casing by vertically pulling it off the well. Using a tremie tube, fill the inner well casing with an impermeable grout slurry from the bottom to ground surface. After 24 hours, retop the grout if it has settled below the existing ground surface.

(b) Well Construction Is Improper Or Undocumented - Attempt to remove the well casing. If this fails, either drill around the well casing using a hollow stem auger of large inside diameter or drill out the well casing using a standard casing bit or solid stem auger with a boring diameter greater than the initial diameter of the hole. Drill to the maximum depth of the previously drilled boring. Clean the drilling debris from the interior of the auger or bore hole. Seal the bore hole with an impermeable grout using a tremie tube. If the soil conditions permit the sealing to be conducted in a continuous operation, keep the tremie tube submerged in the grout at all times. After 24 hours, retop the grout if it has settled below the ground surface.

(c) Monitoring Wells In Future Fill Areas - Remove well and seal as described in B.3.e.9)a)(2). Dig a pit around the well five feet below the ground surface or five feet below the base of the proposed landfill excavation, whichever is deeper. Fill the pit above the abandoned hole with compacted one foot (maximum) layers of clay which meets the downward leakage criteria ($0.004 \text{ ft}^3/\text{day}/\text{ft}^2$).

4. Monitoring Well Maintenance Performance Reevaluation Plan - Rule 567 IAC 103.2(3)c. requires preparation of a well maintenance performance reevaluation plan which includes the following items (as a minimum):

- a. Every two years an examination of high and low water levels accompanied by a discussion of the acceptability of well location (vertically and horizontally) and exposure of the screened interval to the atmosphere.
- b. A biannual evaluation of water level conditions in the monitoring wells to ensure the effects of waste disposal or well operation have not resulted in changes in the hydrologic

setting and resultant flow paths.

- c. Annually conduct well depth measurements to ensure wells are physically intact and not filling with sediment.
- d. Every five years conduct pumping tests on monitoring wells; compare test data with those collected originally to determine if well deterioration is occurring.

5. Sampling Protocol.

At a minimum, the sampling protocol must include procedures or descriptions of the following:

- a. Order in which monitoring points are to be sampled.
- b. All tests and procedures needed at each monitoring point and the order in which these procedures will be carried out.
- c. Equipment and containers to be used, procedures and precautions for their use; precautions to avoid introducing contaminants from outside sources into monitoring wells or samples; and how equipment must be cleaned between uses.
- d. Procedures for evacuating each monitoring well prior to each water quality sampling.
- e. Procedures for handling field blanks and other quality assurance samples at the facility and in transit to and from the laboratory.
- f. Procedures for field filtration of samples, if required.
- g. Procedures for sample preservation.
- h. Procedure for sample collection, labeling and handling at the facility and during transport to the laboratory.
- i. Procedures for recording field observations and measurements.
- j. Procedures for records maintenance and data analysis.
- k. Procedures for sampling surface water monitoring points including exact sampling locations and depths.

C. Hydrologic Monitoring System Operating Requirements

1. Record Keeping and Reporting.

Rule 567 IAC 103.2(3)c.1. requires record keeping and reporting to include the following (in the Annual Report):

- a. Amounts and kinds of wastes accepted under Special Waste Authorizations.

- b. A narrative describing the effects the facility is having on surrounding surface and ground water quality and any changes made or maintenance needed in the monitoring network. This narrative must be prepared by an engineer registered in Iowa.
- c. Graphs showing concentrations versus time for all monitoring parameters for each well for as long as records exist for that parameter. Control limits (\pm two standard deviations from the initial background value) must be shown on each graph. (See Appendix A, Standard Deviation Calculation.)

2. Operational Sampling Requirements

- a. The equipment, materials and procedures used in well evacuation, sampling and subsequent sample handling must minimize contamination or other alteration of the composition of the water sample.
- b. Before evacuating and sampling a monitoring well, the elevation of the water surface must be measured to at least the nearest 0.01 foot. Before sampling, the well must be evacuated based on data obtained from the tests required by Standard B.3.e.8) to ensure the sampling of fresh water from the aquifer or formation.
- c. The persons conducting the sampling must record the procedures, measurements and observations at the time of sampling. The field records must be sufficient to document whether the procedures and requirements specified in subrule c.1. have been followed. The records must also contain the names of the persons conducting the sampling, the time and date each monitoring point was sampled, the required field measurement or test result. The owner or operator must submit copies of these field records to the Department if requested. The owner or operator must retain the records generated throughout the active life and post-closure period of facility operations. During the active life of the facility, the records must be available on-site for Department staff to review.

d. Required Parameters

1) Parameters characterizing drinking water suitability:

- a) Arsenic, Dissolved
- b) Barium, Dissolved
- c) Cadmium, Dissolved
- d) Chromium, Total Dissolved
- e) Fluoride, Dissolved
- f) Lead, Dissolved
- g) Mercury, Dissolved
- h) Magnesium, Dissolved
- i) Selenium, Dissolved
- j) Silver, Dissolved

- k) Zinc, Dissolved
- l) Copper, Dissolved
- m) Suspended Solids, Total
- n) Dissolved Solids, Total
- o) Sodium, Dissolved
- p) Alkalinity
- q) Calcium, Dissolved
- r) Manganese, Dissolved
- s) Hardness
- t) Potassium, Dissolved
- u) Nitrate and Nitrite (as N)
- v) Benzene
- w) Carbon Tet
- x) 1,2-Dichloroethane
- y) Trichloroethylene
 - 1,1,1-Trichloroethane
 - 1,1-Dichloroethylene
 - Paradichlorobenzene
 - Vinyl Chloride

2) Routine Monitoring Parameters.

- a) Chloride
- b) Specific Conductance*
- c) pH**
- d) Ammonia Nitrogen
- e) Iron, Dissolved
- f) Chemical Oxygen Demand
- g) Temperature*
- h) Sulfate
- i) Any additional parameter deemed necessary by the Department

*Field measurements required.

**Two measurements required: In the field immediately after obtaining the sample, and in the laboratory.

3) Parameters used as indicators of ground water contamination:

- a) Total Organic Carbon
- b) Total Organic Halogen
- c) Phenols
- d) Any additional parameters deemed necessary by the Department.

- e. For each monitoring well, the owner or operator must establish ground water background concentrations or values for all the parameters specified in C.2.d. Monitoring must be conducted quarterly for one year.
- f. For each of the parameters specified in C.2.d.2) and C.2.d.3) plus any additional parameters deemed necessary by the

Department, the initial background arithmetic mean, variance and standard deviation must be obtained for each well by pooling the measurements for the respective parameter concentrations or values in samples obtained during the first year.

- g. After the first year, each monitoring point must be sampled quarterly as specified in the facility's operation permit and analyzed for the parameters specified in C.2.d.2).
- h. Samples collected during one of the quarters each year must be analyzed, in addition to the parameters specified in C.2.d.2), for the parameters specified in C.2.d.3). The facility's operation permit will specify the quarter in which this sampling is to be conducted.
- i. Laboratory Procedures.
 - 1) The owner or operator of the solid waste facility must have the ground and surface water samples analyzed only by laboratories that are certified by the State of Iowa to perform public water supply sample analyses and therefore have and follow a quality assurance program. The quality assurance program must include written procedures covering the following areas:
 - a) Sample containers and preservatives, sample storage and cleaning of sample containers.
 - b) Analytical methods and the laboratory equipment used.
 - c) Quality control measures
 - d) Methods of reviewing and assessing all data for completeness and accuracy.
 - e) Sample retention, procedures in the event a second analysis is needed.
 - f) Preventive maintenance programs for all laboratory equipment.
 - g) Record keeping and data documentation.
 - 2) All analyses must be performed according to methods specified in SW-846 or approved by the United States Environmental Protection Agency. Any analytical method deviating from those specified in SW-846 or approved by EPA must be approved by the Department.
 - 3) All analyses must be recorded on forms provided by the Department. In addition to the analytical results, the laboratory must report the precision of the data set, bias

and limit of detection.

3. Ground Water Quality Assessment Plan

The Department may require a ground water quality assessment plan if leachate migration is detected. Rule 567 IAC 103.2(3)c.3. requires a ground water quality assessment plan to include the following elements.

- a. Discussion of the hydrogeologic conditions at the site with an identification of potential contaminant pathways.
- b. Description of the present detection monitoring system.
- c. A description of the approach the owner or operator will take to substantiate the contention that the contamination may have been falsely indicated.
- d. Description of the investigatory approach used to characterize the rate and extent of leachate migration.
- e. Discussion of the number, location and depth of wells that will be initially installed as well as a strategy for installing more wells in subsequent investigatory phases.
- f. Information on well design and construction.
- g. Description of the sampling and analytical program used to obtain and analyze ground water monitoring data.
- h. Description of data collection and analysis procedures.
- i. Schedule for the implementation of each phase of the assessment study.

D. Post-Closure Monitoring Requirements

Rule 567 IAC 103.2(3)d. requires that as a minimum, the following elements be included in the landfill's twenty-year post-closure monitoring plan or plan and program:

1. Maintenance of approved ground and surface water monitoring systems designed, constructed and operated in accordance with Rule 567 IAC 103.2(3).
2. Activities conducted to retain records and submit reports required by Standard C.1.
3. The continuation of monitoring required by Rule 567 IAC 103.2(3)c.
4. The procedures for conducting the data analysis required by Rule 567 IAC 103.2(3)c.2.

APPENDIX A
STANDARD DEVIATION CALCULATION

Definitions:

Mean - Sum of all the measurements divided by the number of measurements.

Variance - Average of the squares of the difference between the actual measurements and the mean.

Standard Deviation - Square root of the variance.

Example:

YEAR 1 BACKGROUND DATA

<u>Quarter</u> <u>Squared</u>	<u>Well #</u>	<u>TOX</u> <u>Value (PPB)</u>	<u>Difference Between</u> <u>Mean and Value</u>	<u>Differences</u>
1	1	67.4	-2.6	6.76
2	1	65.6	-0.8	0.64
3	1	59.2	5.6	31.36
4	1	67.1	-2	5.29

Mean 64.8
Variance 11.0
Standard Deviation 3.3

Date

Larry J. Wilson, Director

Discussion followed regarding quarterly and annual reports, monitoring, installation costs, analytical costs, and public hearings.

Motion was made by Richard Timmerman to approve the Notice of Intended Action -- Chapter 103, Landfill Groundwater Monitoring Rules and that the areas of discussion today be highlighted in that notice. Seconded by Charlotte Mohr. Motion carried unanimously.

FINAL RULE -- CHAPTER 6, DECLARATORY RULINGS

Mike Murphy, Bureau Chief, Coordination and Information Division, presented the following item.

The Commission is requested to adopt the enclosed Chapter 6, Declaratory Rulings. The Commission approved a notice of intended action on these rules in January. The comment period expired on March 3. There were no comments to the proposed rules from the public or from the Rules Review Committee.

NATURAL RESOURCES, DEPARTMENT OF (561)
Adopted Rule

Pursuant to the authority of 1986 Iowa Acts, Chapter 1245, section 1804 and Iowa Code section 17A.9, the Director of the Department of Natural Resources adopts a new Chapter 6, "Declaratory Rulings," Iowa Administrative Code. This chapter consolidates existing rules of the former agencies merged into the department by 1986 Iowa Acts, Chapter 1245, and will be made applicable to all units of this umbrella agency by concurrent or subsequent rulemaking actions by the Director, Energy and Geological Resources (565); by the Environmental Protection Commission (567); and by the Natural Resource Commission (571).

The Notice of Intended Action was published in the January 28, 1987, IAB as ARC 7326. There were no comments to the proposed rules from the public or from oversight authorities in Iowa government.

These rules implement Iowa Code section 17A.9.

These rules will become effective June 24, 1987.

Adopt a new chapter 561--6(17A), as follows:

This chapter applies to matters within the jurisdiction of the director (Iowa Administrative Code Parts 561 and 565), the environmental protection commission (Iowa Administrative Code Part 567), and the natural resource commission (Iowa Administrative Code Part 571).

Insert the petition for declaratory rulings segments of the Uniform Administrative Rules which are printed in the front of Volume I of the Iowa Administrative Code, with the following amendments:

CHAPTER 6
DECLARATORY RULINGS

561--6.1(17A) Petition for declaratory rulings. In lieu of the words "designate office" insert "the Director of the Department of Natural Resources, Henry A. Wallace Building, 900 East Grand Avenue, Des Moines, Iowa 50319-0034." In lieu of the words "AGENCY NAME," the heading on the petition should read:

BEFORE THE
DEPARTMENT OF NATURAL RESOURCES

561--6.3(17A) Inquiries. Inquiries concerning the status of a petition for a declaratory ruling may be made to the Chief of Government Liaison Bureau, Coordination and Information Division, Department of Natural Resources, Henry A. Wallace Building, 900 East Grand Avenue, Des Moines, Iowa 50319-0034.

Amend rule 561--6.4(17A), second paragraph, by rescinding the paragraph and inserting in lieu thereof the following:

The director shall either issue a ruling or decline to issue a ruling within thirty (30) days after receipt of the petition or receipt of additional information requested, unless a longer period of time is necessary due to the complexity of the issues or the number of pending petitions. If a longer period of time is needed, the director shall notify the petitioner within thirty (30) days. The petitioner shall be notified by certified mail of the director's action. If the issue is within the rulemaking authority of one of the department's commissions, the ruling or declination, along with the petition and briefs, also shall be mailed to the commission members.

A ruling, including a refusal to rule, issued by the director is final unless the issue is within the rulemaking authority of one of the department's commissions in which case the ruling or refusal is final unless appealed to the commission within ten days of receipt by the petitioner or reviewed by the commission on its own motion. On appeal or review, the commission may:

- a. Approve the director's ruling, in which case the ruling becomes the final declaratory ruling of the department, or
- b. Reverse or modify the declaratory ruling, in which case the modified ruling becomes the final declaratory ruling of the department, or
- c. Request additional information from the petitioner, or
- d. Decline to issue a ruling, as specified in 6.5.

The commission's ruling or refusal to rule shall be made within a reasonable time and shall be sent by certified mail to the petitioner upon issuance.

These rules are intended to implement Iowa Code section 17A.9.

April 21, 1987

Larry J. Wilson, Director

Motion was made by Donna Hammitt to approve Final Rule -- Chapter 6, Declaratory Rulings. Seconded by Richard Timmerman. Motion carried unanimously.

REFERRALS TO THE ATTORNEY GENERAL

Mike Murphy, Bureau Chief, Coordination and Information Division, presented the following item.

The Director requests the referral of the following to the Attorney General for appropriate legal action. Litigation reports have been provided to the Commissioners and are confidential pursuant to Iowa Code Section 22.7(4).

Jetter Hauling Service (Clinton) -- Solid Waste
City of Willey -- Water Supply

The King Management case tabled at the March meeting is requested to be left on the table until the May meeting, as staff is attempting to settle that case.

King Management

Tabled until next meeting (action taken yesterday).

Jetter Hauling Service

Mike Murphy presented a detailed history of this case.

Motion was made by Charlotte Mohr for referral to the Attorney General's Office. Seconded by Donna Hammitt. Motion carried unanimously.

PROPOSED CONTESTED CASE DECISION -- YODER, INC.

Mike Murphy, Bureau Chief, Coordination and Information Division, presented the following item.

The department issued an administrative order on September 24, 1986 to several parties concerning alleged solid waste and water pollution control violations at a chicken feeding operation in Wapello County. The order was amended on December 5, 1986. The corporate parties, including Yoder, Inc., appealed this order and hearing was held on December 16, 1986. The proposed decision of the hearing officer affirming the department's orders as to Yoder, Inc. is attached.

Yoder, Inc. may appeal this proposed decision to the Commission. In the absence of an appeal, the Commission may decide on its own motion to review the proposed decision. If there is no appeal or review of the proposed decision, it automatically becomes the final decision of the Commission.

The Commission took no action on this. This has the effect of upholding the hearing officer's decision unless there is an appeal.

LITIGATION STATUS

Chairman Schlutz asked that the Commission go into closed session to discuss Item 17, Litigation Status. Mike Murphy stated that a motion is needed to go into closed session pursuant to Iowa Code Section 21.5c to discuss strategy with legal counsel in matters that are presently in litigation.

Motion was made by Clark Yeager to go into closed session. Seconded by Nancylee Siebermann.

Chairman Schlutz requested a roll call vote. "Aye" votes were cast by Commissioners Timmerman, Appelgate, Yeager, Hammitt, Uhl, Gieselman, Mohr, Siebermann and Schlutz. Motion carried 9 to 0.

Motion was made by Charlotte Mohr to adjourn the closed session and go into open session. Seconded by Nancylee Siebermann.

Chairman Schlutz requested a roll call vote. "Aye" votes were cast by Commissioners Timmerman, Appelgate, Yeager, Hammitt, Uhl, Gieselman, Mohr, Siebermann and Schlutz. Motion carried 9 to 0.

Motion was made by Richard Timmerman to accept the proposal for settlement, that being, the state will pay costs (approximately \$70) and the petition will be dismissed with prejudice. Seconded by Charlotte Mohr. Motion carried unanimously.

ADDRESS ITEMS FOR NEXT MEETING

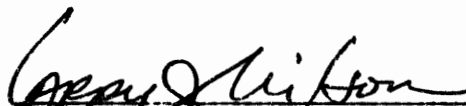
Status of Update on Union County Bridge
Update on Chichaqua
Tour of Metro East Landfill -- June
Tour of Newton Wastewater Treatment Plant

NEXT MEETING DATES

May 20, 1987
June 15-16, 1987
July 20-21, 1987

ADJOURNMENT

With no further business to come before the Environmental Protection Commission, Chairman Schlutz adjourned the meeting at 3:05 p.m. on Tuesday, April 21, 1987.


Larry J. Wilson, Director


Charlotte Mohr, Secretary

(EPC/4-87)

ADM -1-6-7 w
April 1987

MEETING AGENDA
ENVIRONMENTAL PROTECTION COMMISSION
WALLACE STATE OFFICE BUILDING
DES MOINES, IOWA

April 20-21, 1987

Meeting Convenes at 1:30 p.m., April 20, 4th floor conference room and reconvenes on April 21, 8:30 a.m.

Break 3:00 p.m.

Appointments:

Dick Burdock, Metro Landfill , 4:00 p.m.

Meeting Reconvenes 8:30 a.m. April 21

Break 10:00 a.m.

Public Participation 10:30 a.m.

Appointments:

Donald Cell, Professor of Economics,
Cornell College 11:00 a.m.

City of Willey 1:00 p.m.

1. Approval of Agenda.
2. Approval of Minutes of March 16, 1987.
3. Monthly Reports. (Stokes) Informational.
4. Status of The One-Time Pesticides and Synthetic Organic Chemical Monitoring Activity. (Stokes) Informational.
5. Grants to Public Water Supplies. (Stokes) Informational.
6. Change in Maximum Contamination Level for Fluoride. (Stokes) Informational.
7. Water Conservation and Priority Allocation Rules: Revisions to Chapters 50, 51 and 52. (Stokes) Informational.
8. Fiscal Year 88 Construction Grants Priority System and Priority List. (Stokes) Informational.
9. Des Moines Area Carbon Monoxide Study. (Stokes) Informational.
10. Proposed Action Plan for SO₂ SIP Revision. (Stokes) Decision.

NAME: Richard Burdick
ADDRESS RR 2
REPRESENTING Neighlon

SUBJECT:

Low fill

Appointment 4pm - 4/20/87

NAME: Sam Stanzyk
ADDRESS R.R. 1, Barab
REPRESENTING Willey IA

SUBJECT: Hearing with
the Dept. of Natural Resources

NAME: Dan Bartelme
ADDRESS Rumells
REPRESENTING Farmer

SUBJECT:

Water pollution

ask him to speak -
Bartelme - concerned about
landfill pollution -

NAME: Dave Leach
ADDRESS 1078 7th St NW
REPRESENTING my perception of state interest

SUBJECT:

error in groundwater by
findings

NAME: Philip H. Brant
ADDRESS Centerville, Iowa
REPRESENTING Iowa Southern Utilities
SUBJECT: Sulfur Dioxide
regulations - SIP revisions

10 on agenda

NAME: DONALD C. OELL
ADDRESS 302 S. 2nd St. E.
Mount Vernon, Iowa
REPRESENTING _____

SUBJECT: Environmental Protection;
a matter of Education or Enforcement?

NAME: Senator Bill Stebbins
ADDRESS 518 Williams De la
REPRESENTING Constituents
SUBJECT: Water Quality
Nefta East (an 11)

ENVIRONMENTAL PROTECTION COMMISSION

April 20-21, 1987

NAME	COMPANY OR AGENCY	CITY
(Please print)		
J. P. McParthland	IOWA Electric	Cedar Rapids
Marjorie Dennison	Cedar Rapids Gazette	Des Moines Bureau
David L. Dohy	Iowa Public Service Co.	Sioux City
Philip H. Brunk	Iowa Southern Utilities	Centerville
Cindy Hildebrand	Powa Audubon Council	Ames
Pam Heely	Northwestern National Gas	DSM
Robin Fortney	Iowa Power and Light	DSM
Lee Friell	University Hygienic Lab	Des Moines
Joan O. Hill	Conservation Commellee	DES MOINES
Alice S. Proctor	W.M. - Founders Garden Club	
	DSM Conservation Committee - DSM	
	Founders, Garden Club	Des Moines
Connie Jurek	WTO - Radio News	Des Moines
Kelly Eckerman	WTO - TV News	DSM
Michael Potter	Farmer	Runnells
Debra Potter		
Lewanna Gulling	Farmer	Runnell
Louise Gulling		
Earl Danks	Farmer	Wichita Falls
Marlene Gulling	Farmer	Runnells
Clara Rhoten		Runnell

ENVIRONMENTAL PROTECTION COMMISSION

April 20, 1987

NAME	COMPANY OR AGENCY	CITY
(Please print)		
Janetta De Groot	Farmer	Mitchellville
Fred De Groot	Farmer	Mitchellville
Frank Sloan	Farmer	Runnells
Shirley Burlock	Farmer	Mitchellville
Richard Burdock	Farmer	"
Ernest Vogelner	Farmer	Mitchellville
Harry & Laase	retired Farmer	Runnells
Wayne M. Miller	Farmer	
Kathryn L. Miller	Farmer	
Bonnie Sloan	Farmeress	Runnells
James H. Adkins Sr.	Land Owner	Runnells
Mike Johnston	Farmer	Mitchellville
Bill Dillemon	Iowa Senate	Pella
Edward Parker	Iowa House	Mingo
Mr & Mrs Dan Bartelma	Farmer	Runnells.
Mrs. Harry Nelson	Farmer's wife	Runnells
Robert J. Andersen	Iowa Wildlife Fed.	Des Moines Iowa
MIKE Chase	Iowa State Power	De Moines, Ia

ENVIRONMENTAL PROTECTION COMMISSION

April 21, 1987

NAME	COMPANY OR AGENCY	CITY
(Please print)		
MIKE CHASE	Interstate Power	Dubuque, IA
DON JENNIFER	CORN BELT POWER	HUMBOLDT, IA
ROBERT WATTEN	Amesva Rasmussen & Co	Ames
Dave Dwyer	Iowa Public Service Co.	Sioux City, IA
Robin Fortney	Iowa Power & Light Co	DM
Marjorie Dennison	Cedar Rapids Gazette	DM BUREAU
J.P. McFalls	Iowa Electric	Cedar Rapids
Jack Clark	Iowa Utility Comm	Des Moines
Philip H. Brant	Iowa Southern Utilities	Centerville
Lee Frell	Univ Hygienic Lab	Des Moines
Pam Neely	Northern Natural Gas	DSH
Ed. Kestemacher	Petroleum Marketers	D.M.
Bill Wynn	City of DM	DM
Donald Cell	Cornell College	Put. Vernon
Dore Lead	self	Altona
Andy Hildebrand	Iowa Audubon	Ames
Pam Stanzky	Council City of Wilkey Scott County	Wilkey